



THE ROYAL AIR FORCE  
AEROBATIC TEAM



# Contents

- How Do They Do That? ..... 4
- The 2002 Display ..... 6
- Red One - The Leader of The Red Arrows .. 9
- Red Two ..... 10
- Red Three ..... 11
- Red Four ..... 12
- Red Five ..... 13
- Red Six ..... 14
- Red Seven ..... 15
- Red Eight ..... 16
- Red Nine ..... 17
- The 2002 Poster ..... 18
- Red Ten ..... 20
- Team Manager ..... 21
- SEngO & JEngO ..... 22
- The Blues 2002 ..... 23
- Engineering Excellence ..... 24
- The Blues in Action ..... 25
- The Support Team ..... 26
- The Hawk Lead-In Fighter Trainer ..... 28
- World Round-Up ..... 30
- Pride of The Royal Air Force ..... 33
- Roll of Honour ..... 34
- The Reds 2002 ..... 35

RAF Aerobatic Team  
**The Red Arrows**

# An Introduction...



...by Squadron Leader Carl 'Spike' Jepson  
 Leader of the Royal Air Force Aerobatic Team  
 The Red Arrows



Welcome to the brochure that celebrates The Red Arrows' 38th display season and the year in which we are able to participate in the celebration of Her Majesty The Queen's Golden Jubilee.

It is with immense pride that I have taken on the role of Team Leader, following in the footsteps of many distinguished aviators who have so successfully demonstrated the highest standards and traditions of the Royal Air Force. I aim to continue in the same vein and it is a source of great satisfaction to me that I can draw upon the skills and dedication of the men and women of the Royal Air Force Aerobatic Team.

The Team consists of almost 100 personnel from all walks of life; individuals who routinely undertake extremely complex tasks in order to deliver 9 red Hawk aircraft to the display on time, every time.

I believe our flying display will visually demonstrate to you the personal qualities which are the foundations on which the Royal Air Force is built - self discipline, professionalism, motivation

and teamwork. The display you will see this season is the culmination of six months extremely hard work, during which these virtues have been proven in abundance by all involved.

We, the very public face of the Royal Air Force, are but a small part of a large organisation, much of which is currently engaged on operations overseas defending our interests, making the world a safer place and acting as a force for good in the world.

I hope this brochure gives an insight into the effort put in by all the personnel of the Royal Air Force Aerobatic Team to ensure that we meet the exacting standards demanded by you. Equally, I hope that you enjoy the brochure and the display. Very best wishes to you all from everyone here at The Red Arrows.

“ The Red Arrows enter the 2002 season under the leadership of Red 1, Squadron Leader Spike Jepson, the newest incumbent in this prestigious role. From historic RAF Scampton in Lincolnshire, the Team has developed breathtaking new manoeuvres for HM The Queen's Golden Jubilee Year.

The 2002 Red Arrows wish you all the very best in the months ahead. ”



RAF Aerobatic Team  
**The Red Arrows**

# How do they do that?

Have you ever wondered how The Red Arrows can appear at displays on either side of the country on the same day, even when the locations are hundreds of miles apart? It is all achieved by a well-oiled machine, which aims to incorporate maximum flexibility into a packed display programme, safely and efficiently. The Team which makes this happen comprises personnel from branches and trades across a broad spectrum within the RAF, all working hard and totally committed to ensuring that the operation seen by the public is as smooth and seamless as possible.

Here is an example of a busy weekend's activities during the display season...

Over the weekend of 8th/9th September 2001 the Team was scheduled to appear on both days at Southport on Merseyside and Duxford in Cambridgeshire and, as is often the case wherever The Red Arrows appear, the organisers of the events asked the Team to close both their shows on both days. This was clearly impossible and was the prelude to a weekend that required all the skills and flexibility that the planners, engineers and pilots could muster.

Firstly, after a great deal of negotiation it was agreed that the Team would open the airshow at Duxford and close at Southport on Saturday 8th September and reverse the sequence for Sunday 9th September. The criteria were still tight, as there was little manoeuvrability available on actual display times, but at least it was possible.



Following a display at Pangbourne in Oxfordshire on Friday 7th September, the main road support party replenished the aircraft at RAF Brize Norton with fuel, diesel and dye, before departing to pre-position themselves at Blackpool.

At 1055 on Saturday the 8th, Red 10, the Commentator and Squadron Flight Safety Officer, left RAF Brize Norton in the spare aircraft and landed at Duxford at 1110 for the pre-display checks which are mandatory at every venue before the Team arrives. At 1150 back at RAF Brize Norton, Red 1 briefed Reds 2 to 9 before departing at 1220. At 1240, the Team arrived on time at Duxford where they executed their 22 minute crowd thrilling display before returning to RAF Brize Norton. On the ground,

Circus - the engineers who fly in the backseats of the aircraft - carried out a rapid refuel turnaround in a time of just 1 hour 13 minutes.

“... a well oiled machine, which aims to incorporate maximum flexibility into a packed display program, safely and efficiently.”



Refuelling at RAF Brize Norton



RAF Aerobatic Team  
The Red Arrows



“... a worthy testament to the professionalism of RAF pilots, groundcrew and the support staff back at base...”

Meanwhile, Red 10 flew the spare Hawk from Duxford to Blackpool and then departed immediately for Southport in a Squirrel helicopter of the Central Flying School Helicopter Squadron from RAF Shawbury in Shropshire.

At RAF Brize Norton, Reds 1 to 9 again carried out their pre-flight briefing before taking off at 1432 for Blackpool. En-route they did two planned flypasts including one over Old Trafford witnessed by a crowd of 67,000 football fans. The pilots landed at Blackpool at 1509 precisely.

The engineering road support party, already in place at Blackpool, conducted a full replenishment of fuel, diesel and dye allowing the pilots to depart at 1705 for a full display at Southport at 1715. When the Team landed back at Blackpool the engineers prepared the aircraft for the following day before standing down for an overnight stay in the local area.

The following day, Sunday 9th September, the pilots were airborne, having briefed as usual, to open the Southport show at 1315 with their full display of 22 minutes. Another refuelling turnaround at Blackpool followed taking 1 hour 25 minutes after which Red 10, who had again travelled to and from Southport by Squirrel helicopter, departed from Blackpool for Duxford in the spare Hawk aircraft, whilst the main formation returned to RAF Scampton, landing at 1542. Here, the engineers who had remained behind at the home base carried out a refuel in 1 hour and 30 minutes.

The Reds then took off for Duxford where they carried out a full display to close the show at 1715, landing back at RAF Scampton at 1754, exactly as planned. The pilots de-briefed when Red 10 landed back at base at 1825, at which point a hectic weekend came to an end.

So, how do they do that? Well, it is a combination of commitment, skill, dedication, flexibility and imagination, but above all it is teamwork which keeps the show on the road.

This weekend in September is a worthy testament to the professionalism of RAF aircrew, groundcrew and the support staff back at base and as an excellent example of the whole Team in action it graphically illustrates... how they do it!

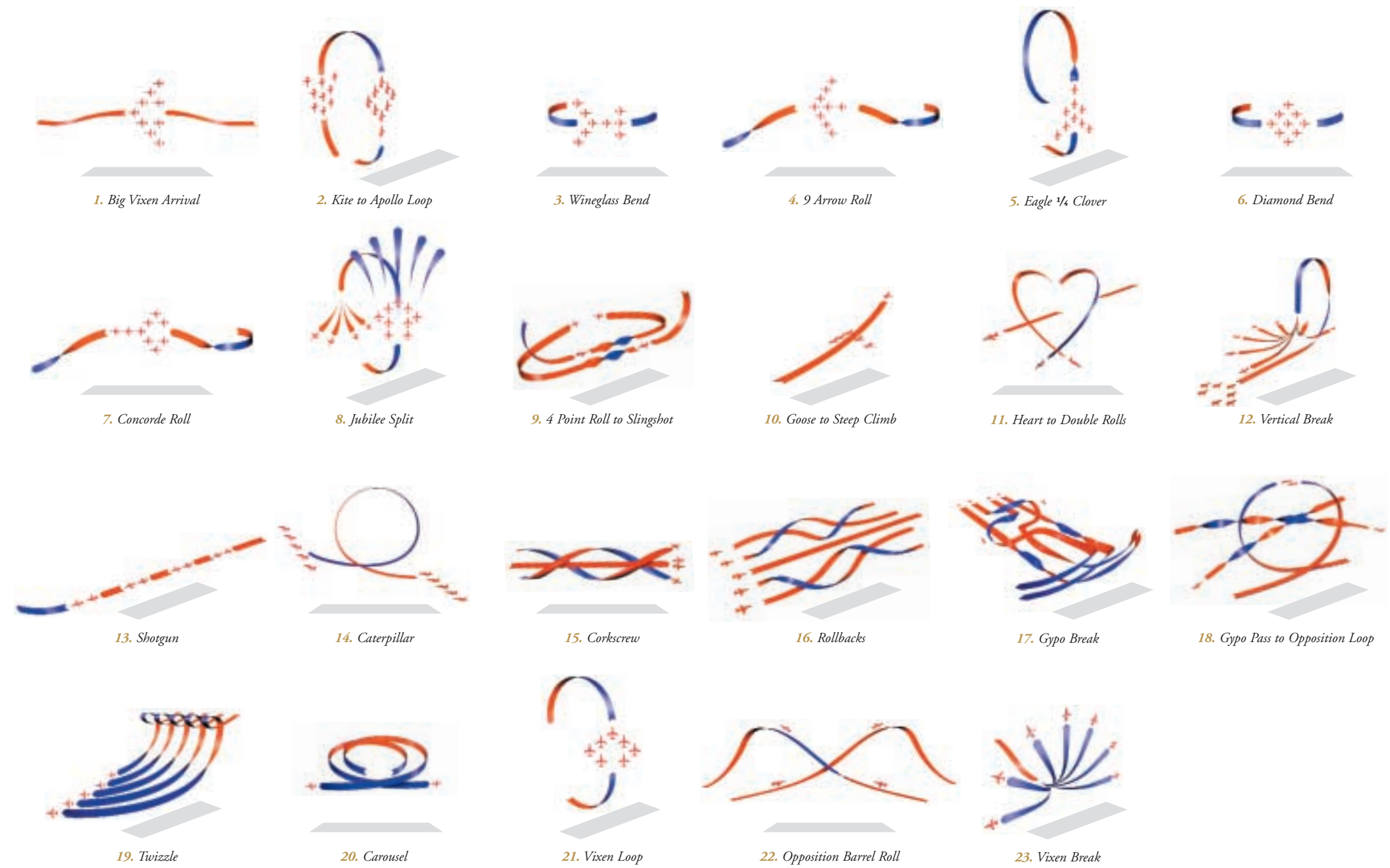


Commentary from Red 10



RAF Aerobatic Team  
The Red Arrows





# The 2002 Display

# Full, Flat or Rolling...



Yes, there really are 3 different types of display. Have you ever wondered why the Team paint a fantastic heart shape in the sky in one display, yet a couple of days later it is conspicuous by its absence? It's all down to the weather (and occasionally airspace restrictions).

Wherever the Team displays, an airspace reservation is requested around the display location. To ensure the safety of all concerned, the reservation is requested to 6500 ft above the ground and, if the weather is fine, all of this, with a margin for safety, will be used.

Red 10 is often the only team representative on the ground at some display venues, as he commentates on the show. Additionally, he is responsible to the Team Leader for safety on the ground and will, therefore, report, among other things, actual weather conditions on the ground. If there is a low cloud-base there is little point in flying above it – no one would see anything, so the display must be tailored to suit the conditions.

### Full Display

The Team's and the public's favourite display is known as a Full Display. A 'Full' display is no longer, or more involved, than any other display that the Team flies, but it uses the full vertical extent of the airspace reserved. In short, the formations can be looped.

### Rolling Display

Cloud below, say, 5500 ft is likely to reduce safety margins, therefore the display may need to be tailored for these conditions. In such circumstances the Team will probably fly a Rolling Display. Now, instead of going fully into the vertical to loop the formations, the Team Leader (generally referred to as 'The Boss') will roll the formation, which takes considerably less vertical airspace to perform safely.

### Flat Display

Fine, but if Mr Michael Fish has sent us lots of clouds below 2500 ft, the Boss may need to consider the other display pattern that the Team has practised – the Flat Display. To avoid entering the low cloud, very little vertical displacement is available, and the Boss must keep the Team on a relatively two dimensional plane. So the loop is now essentially a flat loop and the Team will have to manoeuvre in a much flatter aspect.

Many of the manoeuvres can simply be manipulated to accommodate the weather conditions, but some have to be changed completely. For example, the Boss can loop, roll or simply flypast in level flight whilst in Diamond Nine formation. However, the heart must be 'painted' vertically, as trying to paint a heart horizontally simply would not work. The crowd would not be able to view it as a heart. Consequently, there are some variations within the 3 types of display. Also the Boss will regularly call changes from Full to Rolling, or even Flat, and vice-versa, during the display, as weather conditions deteriorate or improve.

## The 2002 Full Display

1. Big Vixen Arrival
2. Kite to Apollo Loop
3. Wineglass Bend
4. 9 Arrow Roll
5. Eagle 1/4 Clover
6. Diamond Bend
7. Concorde Roll
8. Jubilee Split
9. 4 Point Roll to Slingshot
10. Goose to Steep Climb
11. Heart to Double Rolls
12. Vertical Break
13. Shotgun
14. Caterpillar
15. Corkscrew
16. Rollbacks
17. Gyro Break
18. Gyro Pass to Opposition Loop
19. Twizzle
20. Carousel
21. Vixen Loop
22. Opposition Barrel Roll
23. Vixen Break





# Red One



Squadron Leader Carl 'Spike' Jepson flew the Harrier GR7 before joining the RAF Aerobatic Team.

## *Squadron Leader Carl 'Spike' Jepson*

Aged 36, Squadron Leader Jepson took command of The Red Arrows in November 2001. The son of a Service family, he was born in Dhekelia, Cyprus, and educated at Silcoates School, Wakefield where he completed his 'A' levels.

Whilst at school he was awarded an RAF Sixth Form Scholarship and an RAF Flying Scholarship and learnt to fly long before he could drive. He joined the RAF in 1983 and after completion of flying training he was posted, at the age of 21, to fly the Harrier GR3 with 1(F)Sqn, participating routinely in exercises in Norway, Denmark, Central America and the USA. At the end of this tour he completed the Qualified Weapons Instructor Course before being posted to IV(AC)Sqn in Germany where he enjoyed displaying the Harrier GR7 for 2 years.

A short instructional tour on the Harrier Operational Conversion Unit preceded his selection for The Red Arrows where he displayed between 1994 and 1996. He was then posted to Dhahran in Saudi Arabia where he trained from scratch the Royal Saudi Air Force Aerobatic Team – The Saudi Hawks. From overseas he returned to fly the Harrier and, amongst other duties, flew peacekeeping missions over the Balkans and operated from HMS Illustrious.

Squadron Leader Jepson served as a Flight Commander on 3(F)Sqn at RAF Cottesmore flying the night-attack Harrier GR7 before taking command of The Red Arrows.

He is married to Helen and they have two sons, William, 5, and Jonathan, 3. His interests include squash, running, motorbikes and vintage cars.

## *Junior Engineering Officer Flight Lieutenant Tim Beagle*

The Junior Engineering Officer, Flight Lieutenant Tim Beagle, is flying with Red 1 for the 2002 display season. Tim, 37, is an ex-RAF Halton apprentice, who graduated as an airframes/propulsion technician and served on a number of stations before being commissioned in 1996. An avid Shrewsbury Town supporter, Tim is married to Marion and they have a four-year-old son, Samuel.



*Squadron Leader Carl 'Spike' Jepson*



The Red's 



# Red Two



Flight Lieutenant David Thomas flew the Harrier GR7 before joining the RAF Aerobatic Team.



## Flight Lieutenant David Thomas

Flight Lieutenant David Thomas, 33, joins the Team for the 2002 display season. He was born in Newcastle-Upon-Tyne and was educated at Longbenton High School. He was a member of 2344 (Benton) Air Training Corps and joined the RAF as an airman in 1988. After 3 years service he was commissioned at Royal Air Force College Cranwell and progressed through flying training at RAF Swinderby followed by Linton-on-Ouse.

Due to a backlog in flying training, DT spent 2 years waiting for a posting to RAF Valley to continue his flying training. He spent time at RAF Finningley before starting Advanced Flying Training on the Hawk. He was eventually posted to the Harrier GR7 and after completing the Operational Conversion Unit (OCU) was posted to IV(AC)Sqn at RAF Laarbruch in Germany. Whilst in Germany, he flew operational missions over the Balkans and participated in exercises in the USA, Canada, Norway and Europe. In 1999, IV(AC)Sqn left Germany and returned to RAF Cottesmore, Rutland.

At the end of his first tour, DT completed the Qualified Weapon Instructors Course and was posted to 3(F)Sqn. He saw a return to operational duties over Kosovo and took part in exercises in the USA and Canada and flew from the deck of HMS Illustrious before being selected to join The Red Arrows.

DT is married to Sara and his interests are mainly sporting, particularly football, tennis and lowering his golf handicap. He is also a keen photographer.

## Junior Technician Andy Wilkie

Jnr Tech Andy Wilkie, 31, is in his second year on Circus and will fly with Red 2 for the 2002 season. Andy lives in York and was married to Carole in March. He is interested in travelling and most sports including skiing, weight training and keeping fit.



Flight Lieutenant David Thomas



The Red's ↑



# Red Three



Flight Lieutenant John Green flew the Jaguar before joining the RAF Aerobatic Team.



## Flight Lieutenant John Green

Flight Lieutenant John Green, aged 35, was born in Northamptonshire but moved to Guildford at a young age. He gained 6 'O' levels at Guildford County School and 2 'A' levels at Malvern College whilst his parents spent two years living in America.

John joined the Royal Air Force in 1987 after studying mechanical engineering at Trent Polytechnic for 2 years. Following Initial Officer Training he completed Elementary Flying Training at RAF Swinderby - where he flew the Chipmunk - and Basic Flying Training at RAF Linton-on-Ouse.

On completion of Advanced Flying Training at RAF Valley, John went to RAF Brawdy for Tactical Weapons Training and then on to RAF Lossiemouth to fly the Buccaneer on both 12(B) and 208 Sqns. When the Buccaneer was withdrawn from service in 1994 he was posted to RAF Valley where he served as a qualified flying, tactics and weapons instructor on 74(F)Sqn.

In 1997, John moved to RAF Coltishall and completed a 3-year tour on Jaguars with 54(F)Sqn. Whilst on 54 Sqn he flew many peacekeeping missions over Northern Iraq and took part in international exercises in the USA, Canada, Oman and Europe.

John is single and enjoys all kinds of sports, especially cricket, skiing and scuba diving.

## Sergeant Tim Jacklin

Sgt Tim Jacklin, 33, is spending his first year as Deputy Circus Leader and he will fly with Red 3. He was born in Scunthorpe, North Lincolnshire and is single with a two-year-old son, Thomas. The majority of his career has been spent servicing all variants of the Tornado aircraft at both first and second line.

In his spare time Tim enjoys music and motor sport.



Flight Lieutenant John Green



The Red's ↑



# Red Four



Flight Lieutenant **Antony Parkinson** flew the **Tornado F3** before joining the RAF Aerobatic Team.



## Flight Lieutenant Antony Parkinson

Flight Lieutenant Antony Parkinson, 37, takes over as Red 4 in his second year on the Team. He joined the RAF in 1983, having gained a Flying Scholarship with the Combined Cadet Force (CCF) at the William Parker School in Hastings.

After Initial Flying Training in America followed by Advanced Flying Training on the Hawk, Parky was posted to the F4 Phantom, completing tours on 111(F)Sqn at RAF Leuchars and 92(F)Sqn at RAF Wildenrath. Conversion to the Tornado F3 followed in 1991, and a further tour on 25(F)Sqn at RAF Leeming, after which he was selected for the NATO Exchange Programme flying the dual-role F-16 Fighting Falcon with the Dutch Air Force at Leeuwarden, in the Netherlands.

After 3 years on exchange he returned to the Tornado F3 Operational Conversion Unit at RAF Coningsby, instructing on 56(R)Sqn. He was the Tornado Display Pilot for the 1999 and 2000 seasons, and won the Steadman Sword for the best British display at the Royal International Air Tattoo 2000. Parky has flown a total of 4,000 hours, including 1,100 on the Phantom, 1,300 on the Tornado and 600 on the F-16.

Married to Ann, he has two children, Edward and James. His interests include playing the piano, wrestling with his boys and driving his 1965 Aston Martin DB5 Convertible.

## Senior Aircraftman Ben Lewis

SAC Ben Lewis, 21, is a new face on Circus this season. He will fly with **Red 4**. Ben is from Stourbridge in the West Midlands where he went to Haybridge High School. Ben worked as a bar supervisor before joining the Royal Air Force in March 2000 as an airframe technician. He says he is both lucky and excited to have his first posting with The Red Arrows.

Ben is single and enjoys skiing, tennis and volleyball.



Flight Lieutenant Antony Parkinson



The Red's 



# Red Five



Flight Lieutenant **Christian Gleave** flew the **Harrier GR7** before joining the RAF Aerobatic Team.



## Flight Lieutenant Christian Gleave

Flight Lieutenant Christian Gleave, 30, remains the youngest member of the Team and is Red 5 in this his second year. He was initially brought up and educated at De La Salle College in Jersey, Channel Islands, subsequently moving to Cheltenham, Gloucestershire.

Christian was awarded a Flying Scholarship with the RAF whilst serving as a member of 2322 (Dowty) Air Training Corps and learnt to fly at Compton Abbas Airfield when he was just 17. He was commissioned into the RAF at Cranwell in 1990, at the age of 18, and progressed through flying training at RAF Linton-on-Ouse, RAF Valley and RAF Chivenor.

After holding at RAF Chivenor for a year, Christian was posted to the Harrier GR7 and on completion of training on the Operational Conversion Unit (OCU), he was posted to IV(AC)Sqn at RAF Laarbruch in Germany. Whilst serving in Germany, he flew operational missions over Bosnia and took part in international military exercises in the USA, Canada, Norway and Europe. "Harrier Operations were an incredible challenge and ultimately it was the aeroplane that I joined the RAF to fly. Although my time on the frontline was hard work, I would not have changed it for the world and I look forward to returning very much."

In 1997, Christian was posted back to RAF Valley on Anglesey, to become a Qualified Tactics and Weapons Instructor on the Hawk, where he was responsible for teaching new instructors and students alike.

Gleavy is single and enjoys most sports, but particularly skiing and tennis. His other interests include scuba diving, property management, travelling and motorbikes.

## Corporal Neil 'Jim' Donaldson

Propulsion Technician Jim Donaldson will be flying with **Red 5** for the 2002 season. This is his second year on Circus, having flown with Red 9 last season. He has completed several tours in the UK and one in Germany. In 1989, he was part of the support team for the solo Hawk display. Jim is 33 years old and single. He supports Celtic, enjoys most sports and has been learning the guitar for 13 years.



Flight Lieutenant Christian Gleave



The Red's 



# Red Six



Flight Lieutenant  
**Jas Hawker** flew  
the **Tornado GR4** before  
joining the RAF Aerobatic Team.



## Flight Lieutenant Jas Hawker

Flight Lieutenant Jas Hawker, 30, is Synchro Lead for the 2002 season. Jas was educated at The Castle School, Thornbury near Bristol. He was a member of 2392 Squadron Air Training Corps, from where he was awarded both a Sixth Form and a Flying Scholarship by the RAF. Jas was commissioned in 1989 and, after completing flying training on the Jet Provost at RAF Linton-on-Ouse and on the Hawk at RAF Valley and RAF Chivenor, he was selected to fly the Tornado GR1. After tours on 27 Sqn at RAF Marham and on 12(B)Sqn at RAF Lossiemouth, Jas became a flying instructor on the Tucano at RAF Linton-on-Ouse. During this tour, Jas had his first taste of display flying as the Tucano display pilot for the 1997 season. He returned to the Tornado on IX(B)Sqn based at RAF Bruggen in Germany, flying the new GR4 variant. During his time on the Tornado, Jas flew operational missions over Southern Iraq and also many exercises over Europe and North America.

For his third and final year on The Red Arrows, Jas will fly in the centre of the Diamond 9 formation and will lead the Synchro Pair. "Flying in The Red Arrows has been both more demanding and rewarding than I ever imagined. Leading the Synchro Pair is a challenge that I am very much looking forward to."

Jas is married to Cath and they have 2 daughters, Jess, aged 5, and Molly, aged 4. His interests include windsurfing, trying to play better golf and driving his 1974 MGB GT.

## Junior Technician Kurt Barker

Airframe technician Kurt will be flying with **Red 6** for the 2002 season. Originally from Staffordshire, he completed tours at RAF Waddington and RAF Brize Norton before joining the Team in 1999. Kurt is 28 years old, enjoys working on his kit car and is interested in all aspects of aviation, including designing, building and flying model aircraft.



Flight Lieutenant Jas Hawker



The Red's 



# Red Seven



Squadron Leader  
**Myles Garland** flew  
the **Harrier GR7** before  
joining the RAF Aerobatic Team.



## Squadron Leader Myles Garland

Squadron Leader Myles Garland, 30, is Synchro Two this year and is in his second season with the Team. He grew up in Devon and was educated at St Boniface's College, Plymouth, from where he was awarded an RAF Flying Scholarship. Myles flew 30 hours under the Scholarship Scheme at Land's End Aerodrome in Cornwall before joining the RAF in 1990.

Flying training at RAF Linton-on-Ouse in North Yorkshire, and Advanced and Tactical Weapons Training at RAF Chivenor in Devon followed, before Myles was posted to the Harrier GR7. On completion of his Harrier conversion training he joined 1(F)Sqn based at RAF Wittering. Myles flew many operational peacekeeping sorties over Bosnia and Iraq, from both land bases and from the decks of HMS Illustrious and HMS Invincible, as well as numerous overseas exercises during this tour.

Having completed the Harrier Qualified Weapons Instructor Course, Myles was briefly posted back to 1(F)Sqn and took part in Exercise Red Flag in the USA. He was then posted to the Harrier Operational Conversion Unit, 20(R)Sqn where he instructed both ab-initio and post-graduate students on weaponeering and tactics before being selected for The Red Arrows.

Myles is married to Emily and they have two sons, George and Oliver. A keen sportsman, Myles enjoys most sports including golf, running and motorcycling.

## Corporal Harry Harrison

Cpl Harry Harrison, 32, will be flying with **Red 7** this season. Before joining The Red Arrows in 1997, He completed tours at RAF Finningley, Bruggen, Coningsby, Wittering and Scampton. Whilst serving on 17(F)Sqn, Harry deployed to Bahrain during the Gulf War and later served with 1(F)Sqn on peace-keeping duties over Bosnia. He is married to Mel and has two children, Donovan and Hayley. Harry is an avid football fan supporting Newcastle United.



Squadron Leader Myles Garland



The Red's 





# Red Eight



Squadron Leader  
**Chris Carder** flew  
the **Jaguar** before joining  
the RAF Aerobatic Team.

## Squadron Leader Chris Carder

Squadron Leader Chris Carder, 38, is in his third season with The Red Arrows and flies as Red 8 for the second year. Born and educated in Saffron Walden, Essex, Chris was a member of the Air Training Corps, during which time he learnt to glide and was awarded an RAF Flying Scholarship. Chris joined the RAF in 1983 and completed flying training on the Jet Provost and Hawk at RAF Cranwell, Valley and Chivenor, before spending his first tour flying the Canberra with 100 Sqn at RAF Wyton.

Chris then moved to RAF Valley to become a Qualified Flying Instructor on the Hawk, where he twice won the No. 4 Flying Training School aerobatics competition and was the 1991 Hawk display pilot. In 1992, Chris began 7 years of Jaguar flying, spending 4 years on 54(F)Sqn at RAF Coltishall, and 3 years instructing on 16(R)Sqn at RAF Lossiemouth. During this time he took part in peacekeeping operations in Iraq and Bosnia as well as in exercises and trials flying throughout Europe and North America.

Immediately before joining The Red Arrows, Chris was the 1999 Jaguar display pilot, and in his spare time was part of a private aircraft syndicate, flying a Tiger Moth and Chipmunk. Chris has amassed nearly 5,000 hours, including 1,500 on the Jaguar and 2,000 on the Hawk, and he holds an airline pilot's licence.

Chris is married to Lou and they have a 3-year-old son, Jake, and a one-year-old chocolate labrador, Rufus. Chris's leisure interests include skiing, motorcycling and watercolour painting.

## Junior Technician Darren Gillan

Avionics Technician Darren Gillan will be flying with **Red 8** for the 2002 season. Originally from Dagenham, Darren completed tours at RAF Bruggen in Germany and RAF Waddington before joining the Team. He is 27 years old, single and enjoys keeping fit, swimming, playing snooker and relaxing with friends. Darren is also undertaking a distance learning course in computer maintenance and is looking forward to a long career in the Royal Air Force.



Squadron Leader Chris Carder



The Red's 



# Red Nine



Flight Lieutenant  
**Justin Hughes** flew  
the **Tornado F3** before  
joining the RAF Aerobatic Team.

## Flight Lieutenant Justin Hughes

Flight Lieutenant Justin Hughes, 35, is in his last year with the Team and is Red 9 and the Executive Officer. He grew up in Southport and was educated at Merchant Taylors School, Liverpool and King George V College, Southport. Justin joined the Army on a Short Service Limited Commission with the Royal Engineers and served for a year with 32 Armoured Engineer Regiment based in Germany, before returning to full-time education, to complete a BSc in physics, at the University of Bristol. Whilst there, he learnt to fly with the University Air Squadron. On leaving university, Justin spent a year backpacking through Nepal, Asia and Australia, before returning to the UK to spend 6 months doing scientific research, whilst waiting to join the RAF.

He was commissioned in February 1990 and, after flying training, joined the Tornado F3 force, serving on both 43(F) and 111(F) Sqn, based at RAF Leuchars, in Scotland. During that time, Justin took part in a large number of exercises and deployments in Bosnia, the Falklands, USA, Canada, Malaysia and Europe.

His interests are mainly sporting, particularly skiing, squash, tennis and windsurfing. He is attempting to learn to play the guitar, without much success.



Flight Lieutenant Justin Hughes



The Red's 





# Red Ten



Flight Lieutenant Steve Underwood flew the Harrier GR7 before joining the RAF Aerobatic Team.

## Flight Lieutenant Steve Underwood

Flight Lieutenant Steve Underwood joined The Red Arrows in December 2001 and is the Road Manager and Commentator for the Team. Steve, 42, was born and raised in Manchester, attending Parris Wood High School until 1977. The following year he travelled around the USA before joining the RAF in October 1979.

After completing Basic Flying Training, Steve was streamed to fly helicopters. Post helicopter training he flew the Puma with 230 Sqn, based at RAF Gutersloh in Germany. In 1985, Steve was selected for instructor training at RAF Shawbury and on graduation from the course was posted to the Wessex. In 1987, a tour of service with The Sultan of Oman Air Force followed, where he instructed on the Huey 205, 212 and 214. Steve returned to the UK in 1989 and 'crossed-over' to become a fixed-wing flying instructor on the Jet Provost, initially based at RAF Church Fenton. Following a brief ground tour as an Operations Officer in the Falkland Islands, Steve was selected to become a Central Flying School instructor at RAF Scampton.

In 1992, he was offered a fast-jet crossover and after successfully completing the Tactical Weapons Course at RAF Chivenor, was posted to the Harrier. On graduation from the Operational Conversion Unit he was posted to 1(F)Sqn, where he flew in operations over Iraq and Bosnia.

In 1997, Steve was posted on instructional duties to RAF Valley and following a brief tour of duty with 208 Squadron, was posted to serve with 19(F)Sqn as a Central Flying School instructor, specialising in the combat and tactics role. He was the Executive Officer on the Squadron from 1997 until 1999.

Steve has been with Philippa for 3 years and both have a mutual love of travel and sport. Skiing is his major sporting activity, closely followed by swimming. Steve's other interests include golf, motorbikes, geography, history and reading.

## Corporal Malcolm Faulder



Corporal Malcolm Faulder will fly in the backseat of Red 10 for this his first year on Circus. Mal is an armament technician originally from Norton Disney near Lincoln. His previous tours include RAF Bruggen, Lossiemouth, Waddington, Turnhouse, Wyton, Laarbruch and Cottesmore.

He lists his hobbies as football and golf and he has just finished building his own home. He is married to Gina and they have two boys Christian, 11, and Callum, 10.



Flight Lieutenant Steve Underwood



The Red's   




families  
air shows  
charity  
public relations  


# Team Manager

## Squadron Leader Lyn Johnson

The Team Manager in 2002 is Squadron Leader Lyn Johnson who joined The Red Arrows in August towards the end of the 2001 display season. Born and educated in Cambridge, she is a regular visitor to her family who still live there.

Lyn left school to join the Royal Air Force in 1978 as an Assistant Air Traffic Controller. After serving as an airwoman at RAF Binbrook and RAF Gutersloh in Germany she was commissioned as an Air Traffic Control Officer. She subsequently went to RAF Wattisham and RAF Akrotiri in Cyprus where she first encountered The Red Arrows during their annual spring training.



A subsequent tour at RAF Marham was followed by the Area Radar Training Course at RAF Shawbury and time at the London Air Traffic Control Centre at West Drayton. She then returned to terminal controlling with Bristol University Air Squadron at Colerne.

Promoted to Squadron Leader in 1998, Lyn went to RAF Valley as the Deputy Senior Air Traffic Control Officer before being short-toured to take up the post of Equerry to HRH The Duke of Edinburgh - this 2-year appointment immediately preceded her move to The Red Arrows.

Lyn has a variety of interests outside of the working environment, but one of her top priorities is her dog Molly. As she is a fast, lean and manoeuvrable tan whippet, Molly has been a most appropriate addition to the Squadron!



Squadron Leader Lyn Johnson

The Red's   




# SEngO & JEngO

## Senior Engineering Officer (SEngO)

**Squadron Leader Mark Northover**, 36, is in his third year as the Senior Engineering Officer and, as such, he is responsible for all engineering and logistics matters concerning the Team. Mark was born near Warrington, Cheshire and whilst studying at Bolton School was awarded an RAF Scholarship. He was also a member of 70(F)Sqn, Air Training Corps, before joining the RAF in 1984 as a University Cadet, studying Mechanical Engineering at Liverpool University.

Following completion of Initial Officer Training, Mark was posted to RAF St Athan as a Flight Commander on 7(Eng)Sqn. After further training, he became a Junior Engineering Officer with 3(F)Sqn at RAF Gutersloh and RAF Laarbruch, when the Squadron relocated with its Harrier GR7 aircraft. Mark was selected to be the Junior Engineering Officer (a post then known as Eng 1) with The Red Arrows for the 1994, 1995 and 1996 seasons and during this period, he undertook tours of South Africa, the Far East and Australia. In 1997, following his first tour with the Team, Mark was awarded the MBE. Consecutive tours at RAF Wyton followed, initially in the Harrier Support Authority and then, on promotion to the rank of Squadron Leader, as the Engineering Authority for the RAF and Royal Navy aircraft escape systems. Finally Mark completed a short appointment as a member of the Inspectorate of Flight Safety, Airworthiness Review Team before returning to The Red Arrows.

Mark is married to Carol and has two children, James and Corinne. In his spare time he enjoys playing a variety of sports including golf, football and squash.

## Junior Engineering Officer (JEngO)

**Flight Lieutenant Tim Beagle**, 37, is the Junior Engineering Officer for The Red Arrows. He is in his second season and is responsible for day-to-day operations on the flight line.

When the Team is operating away from base, Tim flies backseat on all transit flights, so that he is on site to supervise all engineering and logistics operations as soon as the aircraft reach their destination.

Born in London, he was educated in Shrewsbury, following a family move. He left school at 16, joining the RAF in 1981 as an apprentice engineering technician, airframes/propulsion. After graduating from RAF Halton, Tim worked on Search and Rescue Wessex and Sea King helicopters at RAF Chivenor, RAF Finningley, RAF Leconfield and the Falkland Islands, before promotion to Sergeant saw him posted to 7 Squadron Chinooks at RAF Odiham.

Tim was commissioned in 1996 and has since been Officer Commanding an Avionics Training Flight at No. 1 School of Technical Training, RAF Cosford and, prior to joining the Team, was the Junior Engineering Officer on 2(AC)Sqn, operating Tornado aircraft at RAF Marham.

In his spare time, Tim enjoys most sports including golf and he is a keen Shrewsbury Town supporter. He also enjoys travelling and music. Tim is married to Marion and they have a 4-year-old son, Samuel.



*Squadron Leader Mark Northover*



*Flight Lieutenant Tim Beagle*



The Red's 



# The Blues 2002



“The Red Arrows groundcrew, ‘The Blues’, are an eighty-strong team of RAF tradesmen, of varying specialisations, who are responsible for providing the engineering and logistical support necessary to keep the show on the road.”



# Engineering Excellence

The first step to becoming a Blue is a trip to your local Armed Forces Careers Office. There are currently more than 70 trades to choose from, of which 11 are represented on the Royal Air Force Aerobatic Team. They range from flight planning and avionics to propulsion, airframes, survival equipment and supply.

After you 'join up' you complete a seven-week basic training course at RAF Halton, Buckinghamshire and then your trade training commences. The duration of training varies but if you specialize in an aircraft trade you will be posted to No.1 School of Technical Training at RAF Cosford in the West Midlands.

During your training you will be asked for your preferred posting. The RAF's Personnel Management Agency then endeavours to post you to your chosen base.

A few lucky individuals arrive at The Red Arrows straight out of training, whereas others arrive later in their careers, having volunteered to work on the Team. Maintaining The Red Arrows' fleet of 12 high performance Hawk aircraft in pristine condition

requires complete and utter dedication and expertise. Once on The Red Arrows, however, personnel thrive on the special bond that exists between the pilots and the groundcrew.

If chosen for the coveted "Circus" you will join one of the pilots and his aircraft for the whole summer season, transiting to display and operating venues in the back seat of the Hawk.

A place in the Blues means the maintenance of the standards expected of the Team by their worldwide audience and which are exemplified in the motto of The Red Arrows - 'Eclat' meaning 'Brilliance'.



“ A place in 'The Blues' means the maintenance of the standards expected of the Team by their worldwide audience and which are exemplified in the motto of The Red Arrows - 'Eclat' meaning 'Brilliance'. ”



The Blues

The Blues   
in Action...

Survival Equipment

Airframes

Avionics

Motor Transport

Supply

Weapons Technician

Propulsion

Photography

Electrical

Flight Planning

Personnel Administration

# The Support Team

## The Support Team

There is a myriad of behind-the-scenes work taking place to enable the Red Arrows to fulfil its commitments. These are carried out by the Support Team in the Administration Office and in Flight Planning.

The Adjutant, Warrant Officer John May is ably supported in the execution of these tasks by Sergeant Jon Brown, Corporals Karen McNally, Alex Deakin and Ian Ridley, as well as Senior Aircraftmen Phil Matthews and Jenny Dempster.

Amongst their duties are meticulous planning for aircrew and groundcrew alike to ensure that flight planning, logistics, travel and accommodation arrangements are all in place for the Team wherever they go throughout the year.

They also cover day-to-day administration - everything from leave passes to careers advice, recording of statistical data and answering questions from any source - responsibilities which are vital to the efficient running of the Squadron. Their role extends away from RAF Scampton as well and at least one member of the Support Team accompanies the 'Reds' on every overseas deployment.



## Adjutant Warrant Officer John May MBE BEM

John was born in Dundee and educated at St Vincents Primary and Lawside Academy in the city. He was a member of 1232 (City of Dundee) and 2400 (Lawside) Squadrons of the ATC. John joined the Royal Air Force in 1966 and did his basic training at Swinderby and Hereford. A short tour at CFS Helicopters was followed by 13 months at Muharraq in the Persian Gulf. He was then posted to 204 Signals Unit at Feltwell in Norfolk, where he remained until mid-1973 when he moved to the UK Support Unit at Brunssum in the Netherlands.

3 years in Holland saw John posted to 41(F)Sqn at Coltishall just as they re-formed with Jaguars. In 1980 John was promoted to Sergeant and posted back to Swinderby, this time as Personal Assistant to the Station Commander. John remained in VIP world for some time - Swinderby was followed by tours as Personal Assistant to the Senior Air Staff Officer HQ 38 Group at Upavon and the Deputy Commander RAF Germany at Rheindahlen, near Moenchengladbach.

He was promoted to Flight Sergeant in 1986 and moved to the UK Support Unit at HQ Allied Air Forces Central Europe at Ramstein in Southern Germany. However, the VIP world soon beckoned again and he moved sideways at Ramstein in 1987 to work as Personal Assistant to the Deputy Chief of Staff Operations.

John returned to RAF Innsworth, on promotion to Warrant Officer, and for some four years led a team which travelled the length and breadth of the United Kingdom. His team was responsible for the implementation of the computerised personnel administration system which was then in its infancy.

He then moved to RAF Bruggen as Chief Clerk in 1993. John was posted back to Gloucester to run a computer help desk section but this lasted for only 11 months until he returned to Germany, this time to RAF Laarbruch as Chief Clerk. He remained at Laarbruch until it closed in late 1999 when he joined the Red Arrows as the Squadron Adjutant.

John is married to Pat and his hobbies are golf and computerised flight simulation. He was awarded the BEM in 1989 and the MBE in 1997



Adjutant Warrant Officer John May MBE BEM



RAF Aerobatic Team

The Red Arrows

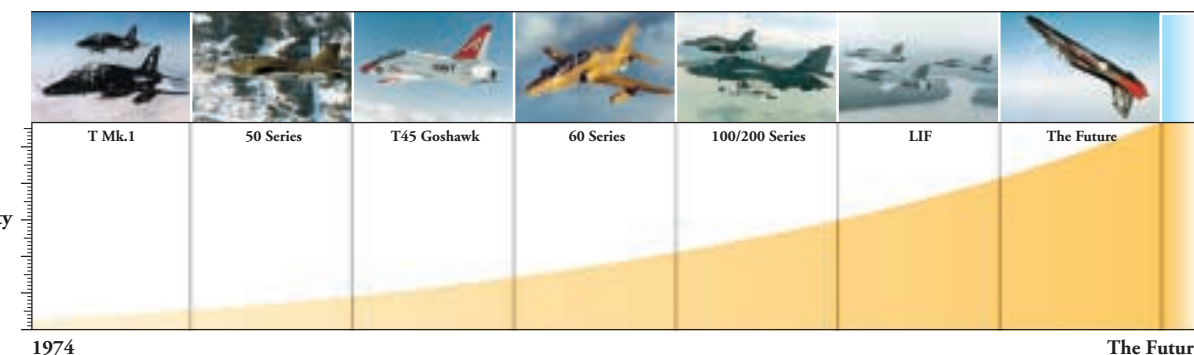


# The Hawk Lead-In Fighter Trainer

## Evolution Becomes Revolution

From the outset, Hawk was designed with future development and exports in mind, and, as if to underline its confidence in the type, Hawker Siddeley (now part of BAE SYSTEMS) built the eighth production Hawk aircraft as a company demonstrator, incorporating a number of enhancements to the basic design. When the Hawk T Mk.1 entered Royal Air Force service, it represented a quantum advance in both operational capability and cost-effectiveness, and subsequent generations of the Hawk family have built on this, through a series of aerodynamic, structural and systems enhancements, finally culminating in the Hawk 100/200 Series with digital avionics systems and true fighter-like performance. Hawk has consistently outperformed and outsold all other aircraft in its class, yet throughout its evolution, has managed to retain the carefree handling characteristics of the original T Mk.1 variant, a fact that is ably demonstrated by Hawk aerobatic teams around the world, doubtless inspired by the supreme aerobatic artistry of the Royal Air Force 'Red Arrows' and their bright red Hawk aircraft.

## Hawk - The Evolutionary Process



## Looking To The Future

If Hawk's development to date has been a matter of evolution, then the new Hawk Lead-In Fighter Trainer is set to start a revolution, - a revolution in the way in which aircrew are trained for future frontline combat aircraft like Eurofighter Typhoon, Gripen, the F-35 Joint Strike Fighter (JSF), Rafale and the F/A-18E/F Super Hornet. The Hawk Lead-In Fighter Trainer is currently demonstrating its availability, and considerable operational potential, in the air, in the global marketplace. The Hawk Lead-In Fighter Trainer is an enhanced and updated version of the Hawk 100 Series, which draws on BAE SYSTEMS' experience in developing the Hawk Lead-In Fighter (LIF) for several air forces around the world. The external contrast between the Hawk Lead-In Fighter Trainer and the original Hawk T Mk.1, is illustrated in the accompanying images, however, the most significant advances are concealed within the aircraft structure.

## Then...

Hawk T Mk.1



## Now... and for the Future

Hawk LIFT

- ① New forward fuselage
- ② Digital cockpits
- ③ New centre & rear fuselage
- ④ New fin & tailplane
- ⑤ New powerplant
- ⑥ New wing
- ⑦ Nose mounted FLIR/LRF & detachable IFR probe



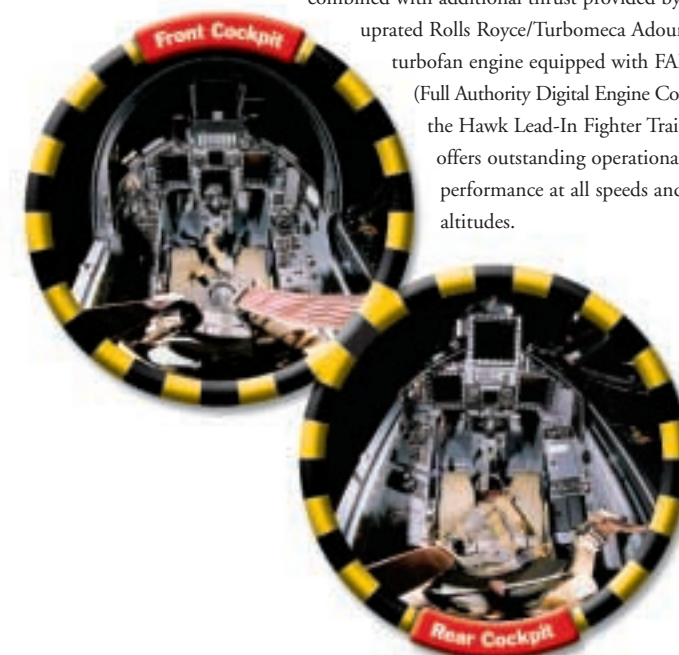
## Hawk LIFT – Hidden Depths

To enter the cockpits of the Hawk Lead-In Fighter Trainer is to enter another world. Gone are the analogue 'clocks and dials' of earlier Hawk variants, replaced by a sophisticated array of instrumentation that would not be out of place in any modern frontline fighter aircraft. In both cockpits, the main instrument console is dominated by three, full-colour, Multi-Function Displays (MFD), each of which is controlled by 'soft keys' and can display the full range of navigation, sensor, weapons and systems data. In the front cockpit, the pilot's field-of view is also dominated by an enhanced, wide-angle, Head-Up Display (HUD) which can be configured with symbology compatible with most modern frontline combat aircraft. Data from the HUD can also be displayed on the central MFD in the rear cockpit. All cockpit instrumentation is fully compatible with the use of Night Vision Goggles. To reduce pilot workload, particularly in critical

“Hawk Lead-In Fighter Trainer  
- Tomorrow's Trainer, Airborne and Available - Today.”

phases of flight, like take-off and landing, and in a combat environment, the Hawk Lead-In Fighter Trainer is equipped with Hands-On-Throttle-And-Stick (HOTAS) controls with moding and switching fully representative of modern front line combat aircraft. An enhanced Stores Management System (SMS) also enables the Hawk Lead-In Fighter Trainer to carry a comprehensive range of weaponry including the latest 'smart' weapons, and extremely accurate weapon delivery is assured through the installation of Inertial Navigation/Global Positioning System (IN/GPS). In a combat environment, speed and agility are of critical importance and, with the advanced aerodynamics of its seven station Combat Wing,

combined with additional thrust provided by an uprated Rolls Royce/Turbomeca Adour turbofan engine equipped with FADEC (Full Authority Digital Engine Control), the Hawk Lead-In Fighter Trainer offers outstanding operational performance at all speeds and altitudes.



## Hawk LIFT – Longer Legs, Greater Autonomy

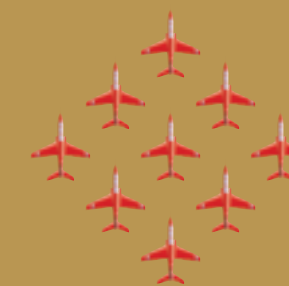
The Hawk Lead-In Fighter Trainer also offers greater operational flexibility, and autonomy of operation, thanks to a number of systems changes that have been incorporated into the aircraft. An Auxiliary Power Unit (APU) and On-Board Oxygen Generation System (OBOGS) reduce reliance on ground support equipment, while Air-to-Air Refuelling (AAR), via a detachable, fixed position probe on the starboard side of the forward fuselage, provides the Hawk Lead-In Fighter Trainer with almost unrestricted range and endurance. Throughout its operational life, critical issues such as structural fatigue can also be precisely monitored via the on-board Health and Usage Monitoring System (HUMS).

## Future Growth

The Hawk Lead-In Fighter Trainer heralds a new era in Advanced Flying / Tactical Weapons Training providing a truly realistic training environment for future frontline combat pilots. The advanced cockpit layouts of the Hawk Lead-In Fighter Trainer introduce aspiring aircrew to the digital environment of both current and future combat aircraft, thereby increasing confidence and reducing the inherent risk to valuable operational assets during the Operational Conversion phase of training. The Hawk Lead-In Fighter Trainer already offers 'Best In Class' operational capability but BAE SYSTEMS is committed to continuous investment in the programme, to develop the aircraft's potential still further. Future enhancements to the aircraft are to include further upgrades to the cockpits and Man Machine Interface (MMI), Open Architecture Avionic Systems, integration of a Datalink capability, a Digital Moving Map Display, integration of TERPROM to provide Terrain Referenced Navigation (TRN) and Ground Proximity Warning (GPW) and synthetic sensor and weapons capability.



Hawk Lead-In Fighter Trainer



RAF Aerobatic Team  
The Red Arrows





Countries in which the Red Arrows have displayed...

Country	Displays
Austria	6
Australia	3
Bangladesh	1
Belgium	80
Bahrain	1
Brunei	3
Canada	13
Cyprus	54
Czech Republic	1
Denmark	19
Egypt	3
Eire	3
Finland	10
France	53
Germany	170
Gibraltar	6
Greece	2
Hungary	1
Iceland	2
Indonesia	12
India	2
Italy	37
Jordan	8
Libya	1
Luxembourg	2
Malta	16
Monaco	2
Morocco	1
Malaysia	24
Netherlands	15
Norway	7
Oman	2
Pakistan	3
Phillipines	1
Poland	1
Portugal	3
Qatar	2
Romania	1
Russia	2
South Africa	7
Sweden	15
Singapore	8
Slovakia	4
Spain	4
Saudi Arabia	2
Switzerland	22
Thailand	2
Turkey	8
UAE	16
UK - England	2466
UK - Scotland	115
UK - N Ireland	29
UK - Wales	110
UK - Isle of Man	78
UK - Channel Islands	76
USA	35
Zimbabwe	2
<b>Total Countries</b>	<b>52</b>
<b>Total Displays</b>	<b>3572</b>

# World Round-Up





# Looking for a high flying career?

Watching The Red Arrows perform their brilliant display makes flying look easy. But there's a lot more to it than meets the eye.

To fly at such high speed with absolute precision, people and aeroplanes have to perform to the highest of standards - all the time, every time. The Red Arrows could not reach such perfection in the air without the support of a large team of professionals on the ground.

Pilots have to be able to trust their aircraft totally - and they know it couldn't be in better hands than those of RAF engineering officers and technicians.

None of the pilots or ground crew started their RAF careers as members of The Red Arrows team - they joined the RAF first and worked hard to acquire the necessary skills and experience.

With around 70 career choices available, there may be a place in the RAF team for you.

Why not find out more...



Call **0845 606 5555** or contact any Armed Forces Careers Office (under Royal Air Force in the phone book) or visit the RAF Careers website at [www.rafcareers.com](http://www.rafcareers.com)



## Pride of The Royal Air Force

*Commandant Central Flying School - Group Captain Jon Fynes*

As Commandant of the Central Flying School, in this its 90th year, I am proud to include The Red Arrows in my organisation. The Red Arrows is the public face of the 52,000 members of the Royal Air Force, many of whom are today serving our country on operational, peace-keeping and humanitarian deployments. The Red Arrows pilots, engineers and support personnel are drawn from these regular forces to portray to you our professional standards and quality of people and training.

This year, The Red Arrows is also enabling the RAF to publicly join in our Monarch's Golden Jubilee celebrations with the exciting new display manoeuvre the "Jubilee Split". Recognised as the world's premier aerobatic team, The Red Arrows also represent our country when displaying overseas - indeed they support UK industry by demonstrating the capabilities of UK equipment and people.

Although many in the RAF quietly support their local charities or communities, through The Red Arrows we are able to offer more direct support to a wide range of organisations.

Through the charitable Red Arrows Trust we authorise specific merchandise, recognisable by the 'The Red Arrows', the Diamond Nine and Hawk and Roundel trademarks, using the royalties and any donations we receive to support many other worthwhile causes and charities.

In closing, I hope you enjoy the Red Arrows 2002 display and can share in our pride of the Royal Air Force.



*Commandant CFS - Group Captain Jon Fynes*



The RAF Manual, Flying (Air Publication 3456) is endorsed by the RAF Central Flying School and used extensively for flying training in the Royal Air Force. Aviation enthusiasts can purchase by emailing: [editor@ap3456.connectfree.co.uk](mailto:editor@ap3456.connectfree.co.uk)

For Official Red Arrows Merchandise ☎ 01252 377 675 or visit [www.redarrowsshop.com](http://www.redarrowsshop.com)  
To join The Red Arrows Club ☎ 0870 066 0151 or visit [www.redarrowsclub.com](http://www.redarrowsclub.com)



# Roll of Honour

## 1971

Leader Sqn Ldr R E W Loverseed  
2 Sqn Ldr D S B Marr  
3 Flt Lt A C East  
4 Flt Lt W B Aspinall  
5 Flt Lt P J J Day  
6 Flt Lt C F Roberts  
7 Flt Lt R E Somerville  
Manager Flt Lt K J Tait  
Engineer Flt Lt G E White  
Adjutant WO L Ludlow

## 1972

Leader Sqn Ldr I C H Dick  
2 Flt Lt W B Aspinall  
3 Flt Lt A C East  
4 Flt Lt R E Somerville  
5 Flt Lt K J Tait  
6 Flt Lt P J J Day  
7 Flt Lt D Binnie  
8 Flt Lt E E G Girdler  
9 Flt Lt C F Roberts  
Manager Flt Lt B Donnelly  
Engineer Flt Lt I Brackenbury  
Adjutant WO S Wild

## 1979

Leader Sqn Ldr B R Hoskins  
2 Flt Lt M T Curley  
3 Flt Lt B C Scott  
4 Flt Lt M D Howell  
5 Flt Lt M B Stoner  
6 Flt Lt R M Thomas  
7 Sqn Ldr S R Johnson  
8 Flt Lt N J Wharton  
9 Flt Lt W Ward  
Manager Sqn Ldr R Thilthorpe  
Engineer Flt Lt R A Lewis  
Adjutant WO H G Thorne

## 1980

Leader Sqn Ldr B R Hoskins  
2 Flt Lt M D Howell  
3 Flt Lt W Ward  
4 Flt Lt N J Wharton  
5 Flt Lt B C Scott  
6 Flt Lt R M Thomas  
7 Sqn Ldr S R Johnson  
8 Flt Lt B S Walters  
9 Flt Lt R W Watts  
Manager Sqn Ldr R Thilthorpe  
Engineer Flt Lt R A Lewis  
Adjutant WO H G Thorne

## 1987

Leader Sqn Ldr R M Thomas  
2 Sqn Ldr P J Collins  
3 Flt Lt M A Carter  
4 Flt Lt M J Newbery  
5 Sqn Ldr A B Chubb  
6 Flt Lt C D R McLlroy  
7 Flt Lt A P Thurley  
8 Flt Lt J E Rands  
9 Flt Lt G M Bancroft-Wilson  
Manager Sqn Ldr H R Ploszek  
Engineer Flt Lt J S Chantry  
Adjutant WO M R J Fleckney

## 1988

Leader Sqn Ldr T W L Miller  
2 Flt Lt G M Bancroft-Wilson  
3 Flt Lt D C Riley  
4 Sqn Ldr P J Collins  
5 Flt Lt S W M Johnson  
6 Sqn Ldr A P Thurley  
7 Flt Lt J E Rands  
8 Sqn Ldr J W Glover  
9 Flt Lt M A Carter  
Manager Sqn Ldr H R Ploszek  
Engineer Flt Lt J D Williams  
Adjutant WO M R J Fleckney

## 1995

Leader Sqn Ldr J E Rands  
2 Flt Lt R Matthews  
3 Flt Lt S D Perrett  
4 Flt Lt T Couston  
5 Flt Lt M W Zanker  
6 Flt Lt S Chiddenton  
7 Sqn Ldr K P Truss  
8 Flt Lt C D Jepson  
9 Sqn Ldr M G Hall  
Manager Sqn Ldr H M Williams  
Engineer Flt Lt M J Northover  
Adjutant WO J Howard

## 1996

Leader Sqn Ldr J E Rands  
2 Sqn Ldr A C Offer  
3 Flt Lt D N Stobie  
4 Flt Lt R Matthews  
5 Flt Lt S D Perrett  
6 Sqn Ldr K P Truss  
7 Flt Lt T Couston  
8 Flt Lt C D Jepson  
9 Flt Lt M W Zanker  
Manager Sqn Ldr H M Williams  
Engineer Flt Lt M J Northover  
Adjutant WO J Howard

## 1965

Leader Flt Lt L Jones  
2 Flt Lt B A Nice  
3 Flt Lt R G Hanna  
4 Flt Lt G L Ranscombe  
5 Fg Off P G Hay  
6 Flt Lt R E W Loverseed  
7 Flt Lt H J D Prince  
8 Flt Lt E C F Tilsley  
Manager Sqn Ldr R A E Storer  
Engineer Fg Off C T Harrow  
Engineer Fg Off D Whitby

## 1973

Leader Sqn Ldr I C H Dick  
2 Sqn Ldr W B Aspinall  
3 Flt Lt B Donnelly  
4 Flt Lt E E G Girdler  
5 Flt Lt K J Tait  
6 Flt Lt D Binnie  
7 Sqn Ldr R E Somerville  
8 Flt Lt E E G Girdler  
9 Flt Lt C F Roberts  
Manager Flt Lt B Donnelly  
Engineer Flt Lt I Brackenbury  
Adjutant WO H E D Rundsstrom

## 1981

Leader Sqn Ldr B R Hoskins  
2 Flt Lt B S Walters  
3 Flt Lt W Ward  
4 Flt Lt M H de Courcier  
5 Flt Lt N J Wharton  
6 Sqn Ldr S R Johnson  
7 Flt Lt R W Watts  
8 Flt Lt J Huzzard  
9 Flt Lt R Myers  
Manager Sqn Ldr R Thilthorpe  
Engineer Flt Lt G M Nisbet  
Adjutant WO H G Thorne

## 1989

Leader Sqn Ldr T W L Miller  
2 Flt Lt A W Hoy  
3 Flt Lt M J H Cliff  
4 Flt Lt G M Bancroft-Wilson  
5 Flt Lt D C Riley  
6 Flt Lt J E Rands  
7 Flt Lt S W M Johnson  
8 Flt Lt J W Glover  
9 Flt Lt M J H Cliff  
Manager Sqn Ldr A J Stewart  
Engineer Flt Lt J D Williams  
Adjutant WO M R J Fleckney

## 1997

Leader Sqn Ldr S C Meade  
2 Flt Lt I S Smith  
3 Flt Lt G M Waterfall  
4 Sqn Ldr A C Offer  
5 Flt Lt A Cubin  
6 Flt Lt T Couston  
7 Flt Lt D N Stobie  
8 Flt Lt R Matthews  
9 Flt Lt S D Perrett  
Manager Sqn Ldr H M Williams  
Senior Engineer Flt Lt D Chowns  
Junior Engineer Flt Lt J Russell  
Adjutant WO J Howard

## 1966

Leader Sqn Ldr R G Hanna  
2 Flt Lt D A Bell  
3 Flt Lt R W Langworthy  
4 Flt Lt P R Evans  
5 Flt Lt R Booth  
6 Flt Lt H J D Prince  
7 Flt Lt T J G Nelson  
8 Flt Lt F J Hoare  
9 Flt Lt D McGregor  
Manager Sqn Ldr R A E Storer  
Engineer Fg Off C T Harrow  
Engineer Fg Off D Whitby

## 1974

Leader Sqn Ldr I C H Dick  
2 Sqn Ldr W B Aspinall  
3 Flt Lt B Donnelly  
4 Flt Lt E E G Girdler  
5 Flt Lt C M Phillips  
6 Flt Lt D Binnie  
7 Sqn Ldr R E Somerville  
8 Flt Lt D J Shurley  
9 Flt Lt R Barber  
Manager Flt Lt R M Joy  
Engineer Flt Lt I Brackenbury  
Adjutant WO H E D Rundsstrom

## 1982

Leader Sqn Ldr J Blackwell  
2 Flt Lt B S Walters  
3 Flt Lt J R Myers  
4 Flt Lt M H de Courcier  
5 Flt Lt W Ward  
6 Flt Lt R W Watts  
7 Flt Lt M H de Courcier  
8 Flt Lt W L Miller  
9 Flt Lt A Tolman  
Manager Sqn Ldr R Thilthorpe  
Engineer Flt Lt G M Nisbet  
Adjutant WO H G Thorne

## 1990

Leader Sqn Ldr T W L Miller  
2 Flt Lt A Smith  
3 Flt Lt P C H Rogers  
4 Flt Lt A W Hoy  
5 Sqn Ldr D C Riley  
6 Flt Lt S W M Johnson  
7 Flt Lt S A Wyatt  
8 Flt Lt A W Hoy  
9 Flt Lt M J H Cliff  
Manager Sqn Ldr A J Stewart  
Engineer Flt Lt C R Bushell  
Adjutant WO M R J Fleckney

## 1998

Leader Sqn Ldr S C Meade  
2 Flt Lt A D E Evans  
3 Flt Lt M R Cutmore  
4 Flt Lt I S Smith  
5 Flt Lt R P G Patounas  
6 Flt Lt D N Stobie  
7 Flt Lt A Cubin  
8 Sqn Ldr A C Offer  
9 Sqn Ldr G M Waterfall  
10 Flt Lt R R Jones  
Manager Sqn Ldr E E Webster  
Senior Engineer Flt Lt G Martin  
Junior Engineer Flt Lt J Russell  
Adjutant WO J Howard

## 1967

Leader Sqn Ldr R G Hanna  
2 Flt Lt D A Bell  
3 Flt Lt F J Hoare  
4 Flt Lt P R Evans  
5 Flt Lt R Booth  
6 Flt Lt H J D Prince  
7 Flt Lt E E Jones  
8 Flt Lt L G Wilcox  
9 Flt Lt D Whitby  
Manager Flt Lt R A E Storer  
Engineer Fg Off D Whitby

## 1975

Leader Sqn Ldr R B Duckett  
2 Flt Lt M J Phillips  
3 Flt Lt B Donnelly  
4 Flt Lt R Eccles  
5 Flt Lt J Blackwell  
6 Flt Lt D Sheen  
7 Sqn Ldr B R Hoskins  
8 Flt Lt M Cornwell  
9 Flt Lt R Barber  
Manager Sqn Ldr A L Wall  
Engineer Flt Lt A Hunt  
Adjutant WO H G Thorne

## 1983

Leader Sqn Ldr J Blackwell  
2 Sqn Ldr I J Huzzard  
3 Flt Lt J R Myers  
4 Flt Lt T W L Miller  
5 Flt Lt E H Ball  
6 Flt Lt M H de Courcier  
7 Flt Lt A Tolman  
8 Flt Lt S H Bedford  
9 Flt Lt C A R Hirst  
Manager Sqn Ldr J E Steenson  
Engineer Flt Lt M E J Render  
Adjutant WO H G Thorne

## 1991

Leader Sqn Ldr A P Thurley  
2 Flt Lt G P Howes  
3 Flt Lt N C Rogers  
4 Flt Lt A Smith  
5 Flt Lt S C Meade  
6 Flt Lt J M Newton  
7 Flt Lt S A Wyatt  
8 Flt Lt A W Hoy  
9 Flt Lt M J H Cliff  
Manager Sqn Ldr A J Stewart  
Engineer Flt Lt C R Bushell  
Adjutant WO M R J Fleckney

## 1999

Leader Wg Cdr S C Meade  
2 Flt Lt J D Provost  
3 Flt Lt M R Cutmore  
4 Flt Lt A D E Evans  
5 Sqn Ldr K A Lewis  
6 Sqn Ldr A Cubin  
7 Flt Lt R P G Patounas  
8 Flt Lt I S Smith  
9 Sqn Ldr G M Waterfall  
10 Flt Lt R R Jones  
Manager Sqn Ldr J M Paige  
Senior Engineer Sqn Ldr M J Northover  
Junior Engineer Flt Lt A D McNeill  
Adjutant WO J Howard

## 1968

Leader Sqn Ldr R G Hanna  
2 Flt Lt D A Bell  
3 Flt Lt D A Smith  
4 Flt Lt P R Evans  
5 Flt Lt F J Hoare  
6 Flt Lt R Booth  
7 Flt Lt J T Kingsley  
8 Flt Lt I C H Dick  
9 Flt Lt R B Duckett  
Manager Flt Lt L G Wilcox  
Engineer Fg Off D Whitby  
Adjutant Flt Lt R Dench

## 1976

Leader Sqn Ldr R B Duckett  
2 Flt Lt M J Phillips  
3 Flt Lt R Eccles  
4 Flt Lt D R Carvell  
5 Flt Lt R S Barber  
6 Sqn Ldr B R Hoskins  
7 Flt Lt M Cornwell  
8 Flt Lt M T Curley  
9 Flt Lt N S Champness  
Manager Sqn Ldr A L Wall  
Engineer Flt Lt A Hunt  
Adjutant WO H G Thorne

## 1984

Leader Sqn Ldr J Blackwell  
2 Flt Lt S H Bedford  
3 Flt Lt G I Hannam  
4 Sqn Ldr T W L Miller  
5 Sqn Ldr E H Ball  
6 Flt Lt P A Tolman  
7 Flt Lt A R Boyens  
8 Flt Lt P D Lees  
9 Flt Lt A K Lunnon-Wood  
Manager Sqn Ldr J E Steenson  
Engineer Flt Lt M E J Render  
Adjutant WO D H A Chubb

## 1992

Leader Sqn Ldr A P Thurley  
2 Flt Lt R W Last  
3 Flt Lt M G Ball  
4 Sqn Ldr G P Howes  
5 Flt Lt J C Bird  
6 Sqn Ldr D A Wyatt  
7 Flt Lt S C Meade  
8 Flt Lt A Smith  
9 Flt Lt N C Rogers  
Manager Sqn Ldr L Garside-Beattie  
Engineer Flt Lt R L Miller  
Adjutant WO M R J Fleckney

## 2000

Leader Sqn Ldr A C Offer  
2 Flt Lt J R Hawker  
3 Flt Lt J P Hughes  
4 Flt Lt C D Carder  
5 Flt Lt M R Cutmore  
6 Flt Lt R P G Patounas  
7 Flt Lt J D Provost  
8 Flt Lt A D E Evans  
9 Sqn Ldr K A Lewis  
10 Flt Lt R R Jones  
Manager Sqn Ldr J M Paige  
Senior Engineer Sqn Ldr M J Northover  
Junior Engineer Flt Lt A D McNeill  
Adjutant WO J H May

## 1969

Leader Sqn Ldr R G Hanna  
2 Flt Lt P R Evans  
3 Flt Lt D A Smith  
4 Flt Lt R B Duckett  
5 Flt Lt R Perreux  
6 Flt Lt J T Kingsley  
7 Flt Lt I C H Dick  
8 Flt Lt J D Rust  
9 Sqn Ldr R P Dunn  
Manager Flt Lt P Mackintosh  
Engineer Fg Off G E White  
Adjutant Flt Lt R Dench

## 1977

Leader Sqn Ldr F J Hoare  
2 Flt Lt D R Carvell  
3 Flt Lt R S Barber  
4 Flt Lt M J Phillips  
5 Flt Lt N S Champness  
6 Flt Lt M Cornwell  
7 Flt Lt M T Curley  
8 Flt Lt R M Thomas  
9 Flt Lt M B Stoner  
Manager Flt Lt M B Whitehouse  
Engineer Flt Lt A Hunt  
Adjutant WO H G Thorne

## 1985

Leader Sqn Ldr R M Thomas  
2 Flt Lt P D Lees  
3 Sqn Ldr E H Ball  
4 Sqn Ldr T W L Miller  
5 Sqn Ldr G I Hannam  
6 Flt Lt A R Boyens  
7 Flt Lt A K Lunnon-Wood  
8 Flt Lt C D R McLlroy  
9 Sqn Ldr A B Chubb  
Manager Sqn Ldr H R Ploszek  
Engineer Flt Lt M E J Render  
Adjutant WO D H A Chubb

## 1993

Leader Sqn Ldr A P Thurley  
2 Flt Lt S Chiddenton  
3 Flt Lt M G Ball  
4 Flt Lt B J Cross  
5 Flt Lt J C Bird  
6 Sqn Ldr S C Meade  
7 Flt Lt R W Last  
8 Sqn Ldr G P Howes  
9 Flt Lt N C Rogers  
Manager Sqn Ldr L Garside-Beattie  
Engineer Flt Lt R L Miller  
Adjutant WO J Howard

## 2001

Leader Wg Cdr A C Offer  
2 Flt Lt A F Parkinson  
3 Flt Lt C Gleave  
4 Sqn Ldr M M Garland  
5 Flt Lt J P Hughes  
6 Sqn Ldr J D Provost  
7 Flt Lt J R Hawker  
8 Sqn Ldr C D Carder  
9 Flt Lt M R Cutmore  
10 Sqn Ldr A D E Evans  
Manager Sqn Ldr J M Paige  
Senior Engineer Sqn Ldr M J Northover  
Junior Engineer Flt Lt T Beagle  
Adjutant WO J H May

## 1970

Leader Sqn Ldr D Hazell  
2 Flt Lt R Perreux  
3 Flt Lt D A Smith  
4 Flt Lt J D Rust  
5 Flt Lt J Haddock  
6 Flt Lt I C H Dick  
7 Flt Lt R B Duckett  
8 Flt Lt D S B Marr  
9 Flt Lt R E W Loverseed  
Manager Flt Lt P Mackintosh  
Engineer Flt Lt G E White  
Adjutant WO L Ludlow

## 1978

Leader Sqn Ldr F J Hoare  
2 Flt Lt D R Carvell  
3 Flt Lt M B Stoner  
4 Flt Lt M J Phillips  
5 Flt Lt L A Grose  
6 Flt Lt M T Curley  
7 Flt Lt R M Thomas  
8 Flt Lt S R Johnson  
9 Flt Lt B C Scott  
Manager Flt Lt M B Whitehouse  
Engineer Flt Lt R A Lewis  
Adjutant WO H G Thorne

## 1986

Leader Sqn Ldr R M Thomas  
2 Flt Lt P D Lees  
3 Sqn Ldr A B Chubb  
4 Flt Lt P J Collins  
5 Sqn Ldr G I Hannam  
6 Flt Lt A K Lunnon-Wood  
7 Flt Lt C D R McLlroy  
8 Flt Lt D W Findlay  
9 Flt Lt A P Thurley  
Manager Sqn Ldr H R Ploszek  
Engineer Flt Lt J S Chantry  
Adjutant WO D H A Chubb

## 1994

Leader Sqn Ldr J E Rands  
2 Flt Lt C D Jepson  
3 Flt Lt M W Zanker  
4 Flt Lt K P Truss  
5 Flt Lt M G Ball  
6 Flt Lt R W Last  
7 Flt Lt S Chiddenton  
8 Flt Lt B J Cross  
9 Flt Lt J C Bird  
Manager Sqn Ldr L Garside-Beattie  
Engineer Flt Lt M J Northover  
Adjutant WO J Howard

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