MINISTRY OF DEFENCE

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Military Low Flying in the United Kingdom

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Foreword

By the Assistant Chief of the Air Staff

Military aircraft have operated at low level within United Kingdom Airspace since the end of the Second World War. The nature of military operations has changed considerably in the last 65 years, from the static defensive position of the Cold War years, to highly mobile expeditionary warfare and counter-insurgency operations of today. The roles that our aircraft are required to conduct have also changed, but the need to be able to operate at low level by both day and night remains as important now as it has been in the past.

Recent operations have shown that the ability to conduct tactical re-supply and movement of troops and equipment by both transport aircraft and helicopters in the low level environment remains vitally important to mission success. Equally, there remain situations where fast-jet aircraft are at their most effective in the low level environment. History has shown that future international crises are difficult to predict, and it is necessary to maintain a broad range of capabilities, including the ability to operate at low level, for future contingencies.

The very high calibre of our military people and the courage that they display on a daily basis is critical to mission success, but that is not achieved without comprehensive and targeted training prior to operational deployment. While some training is conducted abroad, most training takes place in this Country. Acquiring the ability to operate in the low-level environment is part of the initial training that all aircrew undergo. Once acquired, this broad skill must be maintained through sufficient practice to retain the capability to deploy our Armed Forces at short notice; this skill must be honed to meet specific operational requirements prior to deployment into an operational theatre. The predominant focus of training activity in the UK is operational preparation, with some continuation training for other contingencies when operational tempo permits.

Every effort is made to minimise potential disturbance by distributing low flying training as widely as possible. However, there are increasing demands on airspace from commercial aviation, renewable energy, increased housing, and leisure and environmental requirements. The Ministry of Defence (MOD) therefore works closely with a wide variety of organisations as part of our commitment to maintain the right balance between the requirements of the community and the provision of fully-trained forces, ready to meet the Nation's operational commitments.

This document explains why our Armed Forces need to undertake low flying training, and where and how it is conducted. Accompanying this document is an appendix containing the annual low flying statistics, showing the amount of low flying training conducted and how it is distributed across the Country.

Contents

Executive Summary

For some years, operations have shown that the ability to operate effectively at low-level by day and night is vital to both helicopters and transport aircraft as they support ground forces. Whilst fast-jets often take advantage of operating at medium level, some operational situations also require fast-jets to make use of the low-level environment to provide effective ground support, and future contingencies may require fast-jets to make more extensive use of this environment.

To maintain operational capability, our Armed Forces must train effectively so that they are ready on arrival in their operational theatres for the tasks that face them. This is the case whether the operational theatre requires war-fighting operations, peace-support or peace-keeping duties, or humanitarian relief. It is vital therefore that military aircrew are fully trained to operate in the low-level environment for the tasks that they face during operations.

Whilst some low flying training is exported overseas, the majority of training takes place in this Country, within the UK Low Flying System. The current UK Low Flying System was established in 1979, along the principle of making as much airspace available for low flying so that the activity can be distributed as widely as possible, rather than concentrated into specific areas with a corresponding increase in low-level traffic for those affected. In practice, there are many areas of the UK where low flying does not take place, such as major centres of population, civil airspace and key industrial, medical and environmental areas. In addition, the pattern of low flying is also affected by aircraft basing and training requirements. As a result, some areas of the Country see more low flying than others.

The amount of low flying conducted is monitored carefully, and measures are available to regulate activity to ensure safety and potential disturbance are properly controlled. Low flying policy, regulations and levels of activity are regularly reviewed to ensure that there is a continuing operational requirement for low flying, and that the training conducted matches these requirements. The focus of low flying training is on preparation for current operations and, where possible, some continuation training is conducted for future contingency operations to maintain a broad capability base.

The amount of low flying training conducted in the UK varies according to the number of aircraft deployed on operational duty, and specific training requirements. The level of activity may decrease when there are significant operational deployments, and increase when operational activity is complete and forces return to the UK. The amount of low flying training conducted during each training year is provided in an appendix to this document.

The UK Low Flying System

The Development of Low Flying

In the early days of military aviation, aircraft were rudimentary with limited performance, and usually operated close to the ground. But as aircraft performance increased, operating at higher altitudes became possible, enabling air power to extend its reach and influence. By the time of WWII, many air operations were conducted at medium-level whilst retaining the ability to operate at low-level for specialized roles, for example Pathfinder target making, or particular targets, for example the Dams Raids. This trend looked set to continue after WWII, as operating at higher altitude was perceived to enable aircraft to fly above enemy air defences. Both the Vulcan bomber and Lightning interceptor were designed and procured under this strategy. However, in the late 50s and early 60s, the introduction by the Warsaw Pact of radar-guided surface-to-air and air-to-air missile systems considerably reduced the viability of aircraft operating at medium or high level. In 1963, the Vulcan switched to a predominantly low-level role as a means of increasing survivability by using terrain to screen the aircraft from defences, signifying a shift in operating philosophy that subsequently influenced the acquisition of future aircraft such as the Buccaneer and Tornado that were designed specifically to operate in the low-level environment. Throughout the Cold War years, the predominantly low-level operating philosophy was adopted by both the UK and other NATO allies and remained unchanged until 1990.

The invasion of Kuwait by Iraq in 1990 not only saw the formation of large-scale coalition air forces, but it also presented the possibility of air operations against a well-equipped air defence

system over very different terrain from northwest Europe. Anticipated high levels of anti-aircraft artillery operating in flat desert terrain influenced the air campaign plan, resulting in many roles being moved to the medium-level environment before air operations commenced. Following the achievement of air supremacy and the destruction of the Iraqi air-defence system, all offensive air operations moved to the medium-level environment with many being conducted using 'smart' laser-guided weapons. Since this second shift in operating philosophy, most fast-jet air operations have been conducted from medium level, with reduced use of the low-level environment.

Transport aircraft have for some considerable time used both low-level and medium-level airspace. Where the operational environment is benign, medium-level airspace offers greater range and payload. However, low-level tactical supply in a hostile combat environment or in a humanitarian relief context has a long history, perhaps most notably defined by the C-47 Dakota over many years since the start of WWII. The essence of low-level tactical supply is precision delivery, of ammunition, food and water, often to troops on the ground in a confined area and under hostile fire.

Battlefield support helicopters were developed to conduct a variety of roles that require them to operate in direct support of, or in close proximity to troops on the ground, and these roles inevitably place SH in extremely hostile environments where they may encounter a variety of threats. Without anti-icing systems or cabin pressurisation, support helicopters do not have the performance and therefore the option to fly above ground-based threats. These aircraft are therefore committed to operating in the low-level environment, to extract as much cover as possible from the terrain and thereby reduce the opportunity for hostile engagement. More recently, the introduction of the attack helicopter has further emphasised the absolute necessity of the low-level environment for effective employment of this highly potent weapon system.

The Need for Low Flying Today

The use of 'smart' weapons from medium level has led some to believe that low-level tactics for fast-jets are no longer required. However, current operations have clearly shown that the presence of fast-jets over hostile forces at very low-level is effective in reducing hostile action or dispersing forces before action has commenced. In addition, despite the availability of 'smart' munitions, situations remain where weapons are required to be delivered from low altitude, or helicopter or transport aircraft require close escort and protection. The resupply of ground forces from the air by transport aircraft is critical in ensuring the continued effectiveness of ground operations, and for many remote locations in hostile territory, resupply must be conducted at low-level to ensure accuracy of delivery. For helicopters, use of the low-level environment is an absolute necessity not only for their protection, but also to deliver and pick up troops and supplies, and evacuate wounded. Use of the low-level environment therefore remains critical to effective combat capability in current operations. Since the development of effective night vision devices, UK military forces have taken advantage of the additional protection available when operating during the hours of darkness, and the ability to operate by both day and night is of considerable importance to our operational effectiveness.

The Need for Low Flying Training

There is a clear operational requirement for UK military aircrew to be proficient in the low-level environment, and crews must therefore be effectively trained prior to operational deployment. Whilst some training is conducted abroad, the majority of low flying training is completed in the UK. For all aircraft types, an incremental programme is used throughout flying training to introduce aircrew to the low-level environment, and then to progressively develop the skills they will need as they transition towards operational duty. Once operational, aircrew must train regularly to ensure that their flying skills are maintained at the right level for their operational role. Training for operational aircrew is focussed largely on ensuring readiness for current operations, with some continuation training being conducted for future contingencies when resources permit. Only the minimum amount of low flying training necessary to meet overall requirements of both aircrew, and the ground forces that they support is conducted.

Low Flying Policy

The Air Staff in the Ministry of Defence is responsible for policy and regulation of all low flying in the UK by both UK and foreign military aircraft and helicopters. Management of military low flying is conducted by Low Flying Operations Squadron based at RAF Wittering. The aim

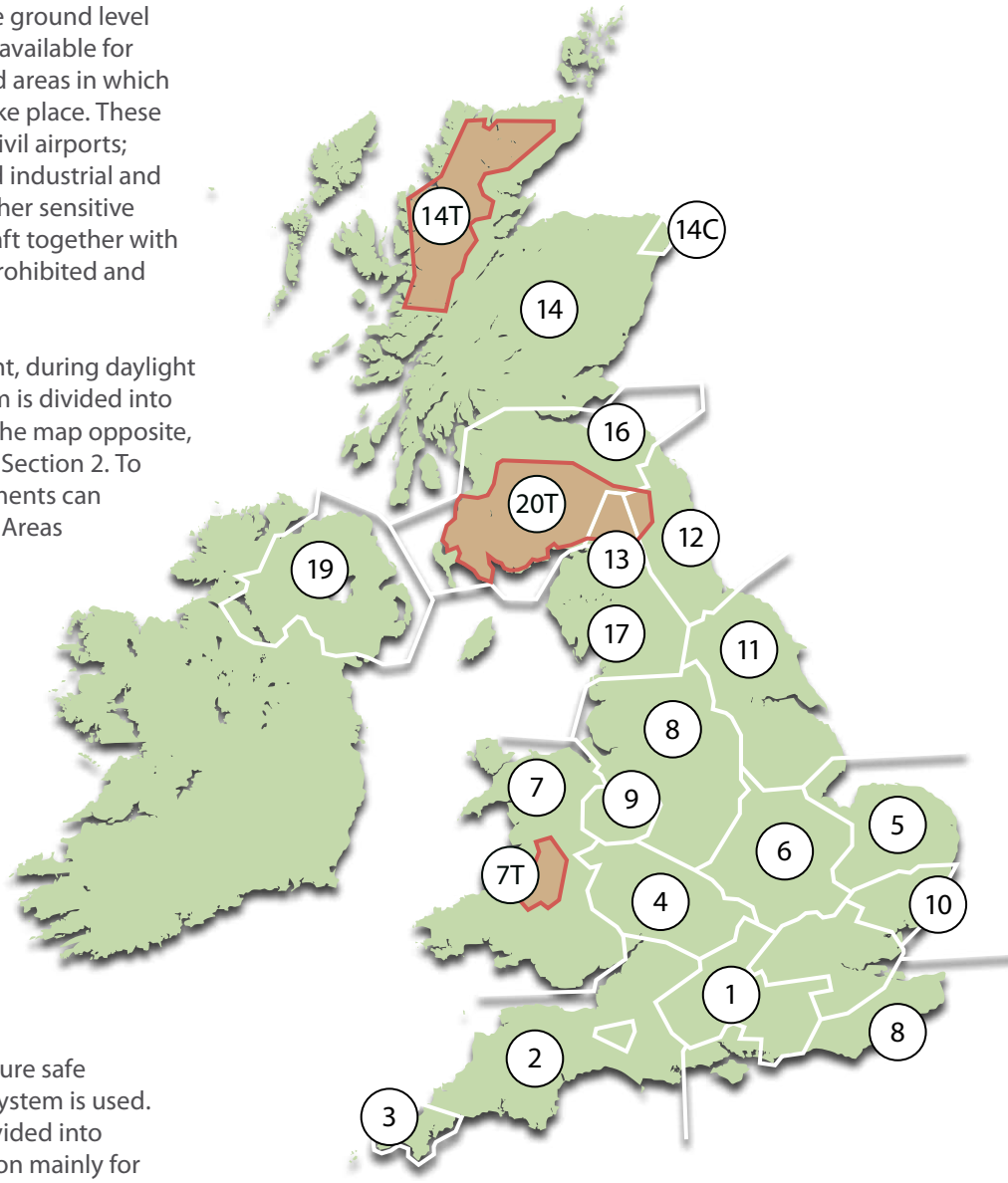
of policy is to ensure that low flying training is conducted efficiently and safely, with the minimum potential disturbance to the general public. The aim of the regulatory structure is to ensure straightforward and clearly defined parameters to which all aircrew using the UK Low Flying System must adhere. Apart from approved exercises for which special arrangements are authorised in advance, all aircraft must have a valid booking into the UK Low Flying System before flight ensuring that the latest safety information is incorporated into flight plans, and that aircraft movements can be easily traced where necessary.

Shape of the UK Low Flying System

The UK Low Flying System extends from ground level to 2000 feet above ground level through the UK. All of the UK is available for low flying except for designated areas in which low flying does not normally take place. These areas include airspace around civil airports; major conurbations; designated industrial and medical establishments, and other sensitive areas. In addition, military aircraft together with civil aircraft avoid all National Prohibited and Restricted Areas.

For effective traffic management, during daylight hours, the UK Low Flying System is divided into 18 Low Flying Areas shown on the map opposite, and described in more detail in Section 2. To ensure special training requirements can be met safely, some Low Flying Areas are allocated to specific groups of users and are known as Dedicated User Areas (Areas 1,3,9,10 and 19). In addition, there are three Tactical Training Areas (numbered 7T, 14T and 20T) located in more remote parts of the UK, where both fast-jet and transport aircraft can conduct Operational Low Flying training at heights that are representative of those necessary during combat operations.

During night-time hours, to ensure safe separation, a slightly different system is used. The UK Low Flying System is divided into two regions, a night rotary region mainly for helicopters and an allocated region mainly for fast-jet and transport aircraft. Within the allocated region, flying units may bid for and be allocated a specific piece of airspace which is then procedurally deconflicted from other users, ensuring safe separation of aircraft.



Distribution of Low Flying Training

Ministry of Defence policy is to distribute low flying training as equitably as possible around all of the UK. However, certain factors influence practical distribution of this activity. Aircraft basing, range and operational role influence airspace requirements and training locations, and there are wide variations in training requirements between fast-jets, C-130 transport aircraft and helicopters. Fast-jet aircraft cover considerable distances during each training sortie and therefore require large areas of airspace that are relatively unpopulated to enable tactical training in multi-aircraft formations to be conducted effectively. In addition, during their training sorties, fast-jets frequently make use of Air Weapons Ranges located around the UK coastline to practice weapons delivery. C-130 transport aircraft can also cover large distances in a single sortie, and also work closely with ground forces in both the air-drop of paratroops and supplies and the air-resupply roles. Helicopters have less range than fixed-wing aircraft, and therefore do not venture as far from their main operating bases. In particular, as the main helicopter role is to support ground forces, training activity frequently takes place in parts of the UK that enable both air and ground forces to train together.

Most operational fast-jet training takes place in Wales, the North of England and Scotland, as these areas offer large areas of unrestricted airspace. Fixed-wing training is based in Anglesey and North Yorkshire. All transport aircraft activity will be based at Brize Norton in Oxfordshire. Operational support helicopters are based in the south of the UK, close to ground forces and their training areas. Royal Navy helicopters are also based in the south of the UK, close to the coast, and much of their training activity takes places over the sea. Helicopter training takes place in Anglesey, Gwynedd, Hampshire and Shropshire.

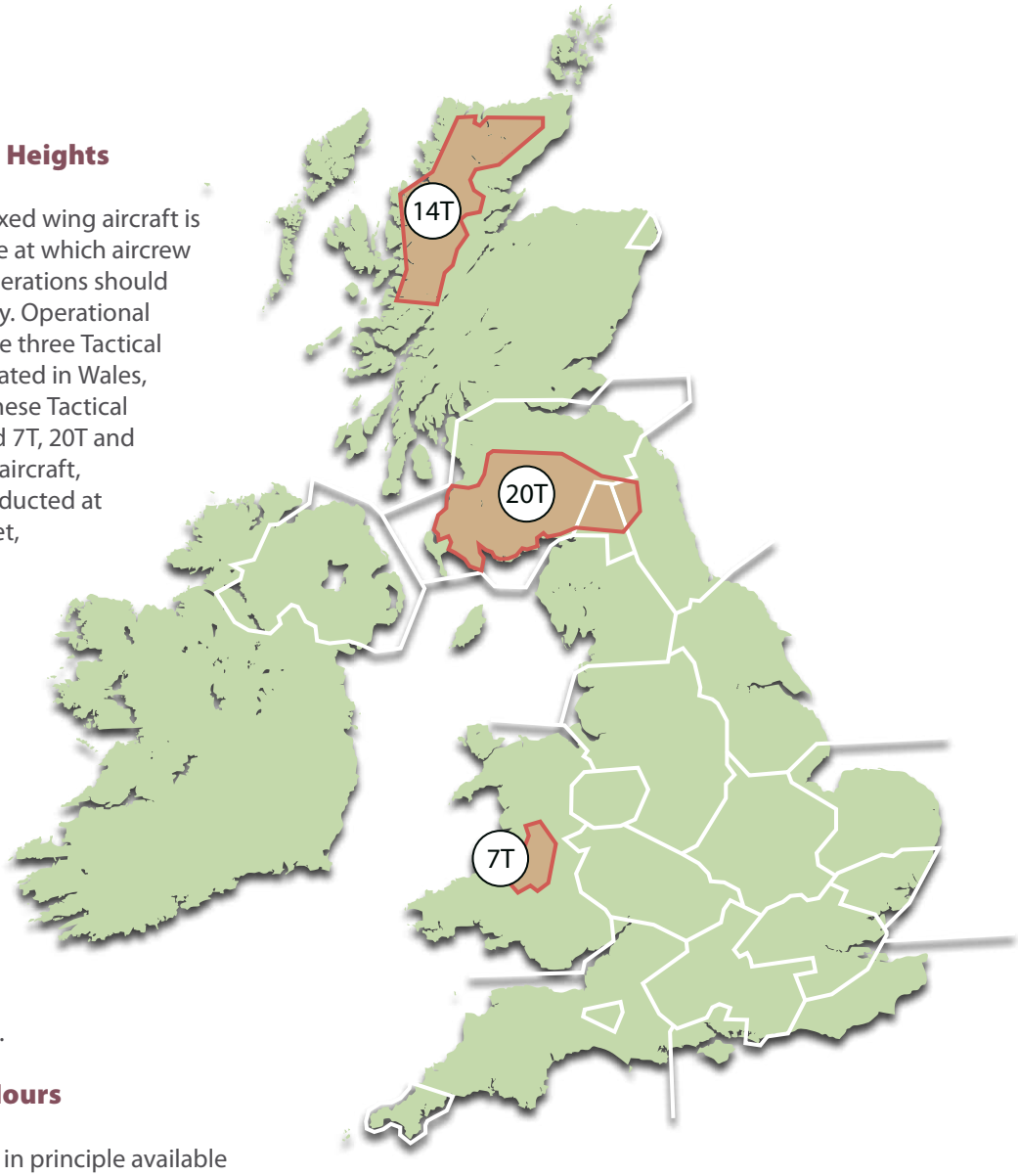
The amount of low flying conducted in each low flying area is reported annually in an appendix to this document.

Routine Low Flying Heights

Throughout the whole UK Low Flying System, fast-jet and transport aircraft are considered to be low flying when below 2000 feet, whilst helicopters and light aircraft are considered to be low flying when below 500 feet. For all routine low flying activity, the minimum height for fast-jet and transport aircraft is 250 feet. Helicopters are normally permitted to conduct routine training down to a minimum of 100 feet, but because of their role, for some training events helicopters can be authorised to fly down to ground level, for example when picking up troops.

Operational Low Flying Heights

Operational Low Flying by fixed wing aircraft is representative of the altitude at which aircrew may be required to fly on operations should low level tactics be necessary. Operational low flying is conducted in the three Tactical Training Areas located in located in Wales, the Borders and Scotland. These Tactical Training Areas are numbered 7T, 20T and 14T respectively. For fast-jet aircraft, operational low flying is conducted at a minimum height of 100 feet, whilst for C-130 transport aircraft, the minimum height is 150 feet. Some of this training activity is exported overseas but it is not possible to export all Operational Low Flying training. Operational Low Flying has the potential to cause increased disturbance. The amount of use of each Tactical Training Area is therefore limited in proportion to the relative size of the available airspace.



Low Flying Operating Hours

The UK Low Flying System is in principle available for 24 hours a day throughout the year. However, to reduce the potential impact of low flying, most low flying training is subject to restricted operating hours. Routinely, most low flying training is conducted between 0800 and 2300 daily, on Monday to Friday. A small amount of low flying activity routinely takes place at the weekend, mostly with Territorial Units, but is largely confined to The Ministry of Defence Training Estate. On Bank Holidays, the UK Low Flying System is routinely closed to all aircraft except Search and Rescue helicopters. Whilst it is possible for low flying training to take place outside these restrictions, for example during major exercises, requests for this type of activity are scrutinised at a high level by either Command Headquarters or the Ministry of Defence itself, to ensure that the training is absolutely necessary and there is a valid reason why it cannot be completed within routine operating hours.

Low Flying Permanent Avoidance Policy

Throughout the UK there are a number of areas that are sensitive to low flying aircraft. The Avoidance Policy operated by the Ministry of Defence is designed to ensure that low flying is conducted at the highest level of safety whilst retaining sufficient airspace to ensure effective training can take place. Avoidance Policy is therefore clearly defined and fairly but strictly applied. Permanent avoidance status is given to towns with populations greater than 10,000 according to the 2001 Census; controlled airspace around civil airports, and selected industrial, medical and environmental sites together with other sites based on case-by-case consideration. New requests for permanent low flying avoidance are carefully considered, but only granted where they meet strict, usually safety-related, criteria.

Low Flying Temporary Avoidance Policy

Every year throughout the UK a variety of short-term events are held where the potential intrusion of low flying aircraft would not necessarily be beneficial to the event. Examples of these types of events are outdoor concerts, agricultural shows, equestrian events and location work for film and television. Where events are both restricted in size and temporary in duration, there is far more scope for authorising temporary avoidance status as there is only a limited impact on overall low flying training. Consequently, subject to operational requirements, requests for temporary avoidance from low flying is usually granted. Details of how to apply for temporary avoidance status are contained in the Useful Contacts section at the back of this document.

Foreign Use of the UK Low Flying System

Military aircraft from other NATO and Allied Nations are permitted to make small-scale use of the UK Low Flying System, and the majority of foreign use is during NATO exercises that enable interoperability training to take place. Foreign aircraft are authorised to use the UK Low Flying System on a strictly reciprocal basis, and may only fly at heights that UK military aircraft could fly in their country. A pre-requisite for using the UK Low Flying System is that all foreign crews are briefed by UK aircrew, and training sorties are planned on UK military mapping that shows all low flying avoidance areas. United States Air Force aircraft permanently based in the UK are not regarded as foreign visitors, but are subject to the same regulations as UK military aircraft.

Major Exercises

Every year, a number of major exercises are held that involve low flying. Some exercises are air only, but many will involve all three Services. Typical of large-scale training is the JOINT WARRIOR series of annual exercises, where up to 100 aircraft, 25 ships and submarines, together with several land force units will exercise in a realistic threat scenario over a two-week period. More discrete training is provided by smaller-scale exercises such as the FAST MOVER series that enables Joint Terminal Attack Controllers to be trained and qualified prior to operational deployment, and involves fast-jets operating at both medium and low-level. Capability development also remains of considerable importance and the NATO Tactical Leadership Programme uses the UK Low Flying System for scheduled course flying. All exercises are carefully controlled and details are made available both in the media and on the Ministry of Defence low flying web site.

Flypasts

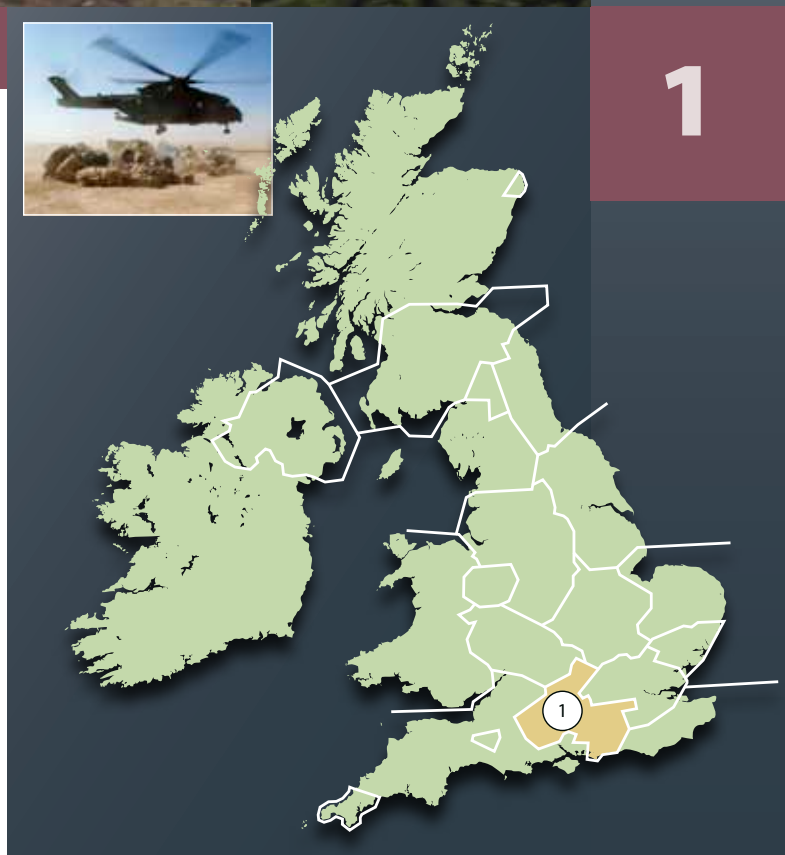
Flypasts by military aircraft are conducted for ceremonial and other occasions and during flypasts, to ensure that the aircraft are clearly visible to the public, aircraft will normally operate within the UK Low Flying System. Special rules are applied to flypasts to ensure that there is a high level of control and scrutiny over this activity, and where it is deemed appropriate, military aircraft may be authorised to enter areas that are not usually used for low flying, for example to perform a flypast over a memorial in a city centre.

Low Flying Areas




Low Flying Area 1

Low Flying Area 1 is located in southern England and is an area of intense helicopter activity for Joint Helicopter Command Units based at RAF Benson and RAF Odiham, together with the School of Army Aviation at Middle Wallop. This Area also contains the Salisbury Plain Defence Training Estate which is the UK's largest training area and of great importance to both air and ground forces. The majority of low flying traffic is therefore helicopters, frequently operating with ground forces to conduct troop insertion and collections, together with re-supply and support that may require under-slung loads to be carried. This Area is also used by C-130 transport aircraft who also conduct much of their work with ground forces during air-dropping and air-landing operations. In addition, the Area is also used by Test and Evaluation aircraft based at Boscombe Down. Low Flying Area 1 represents 3.43% of the total useable overland area of the UK Low Flying System.



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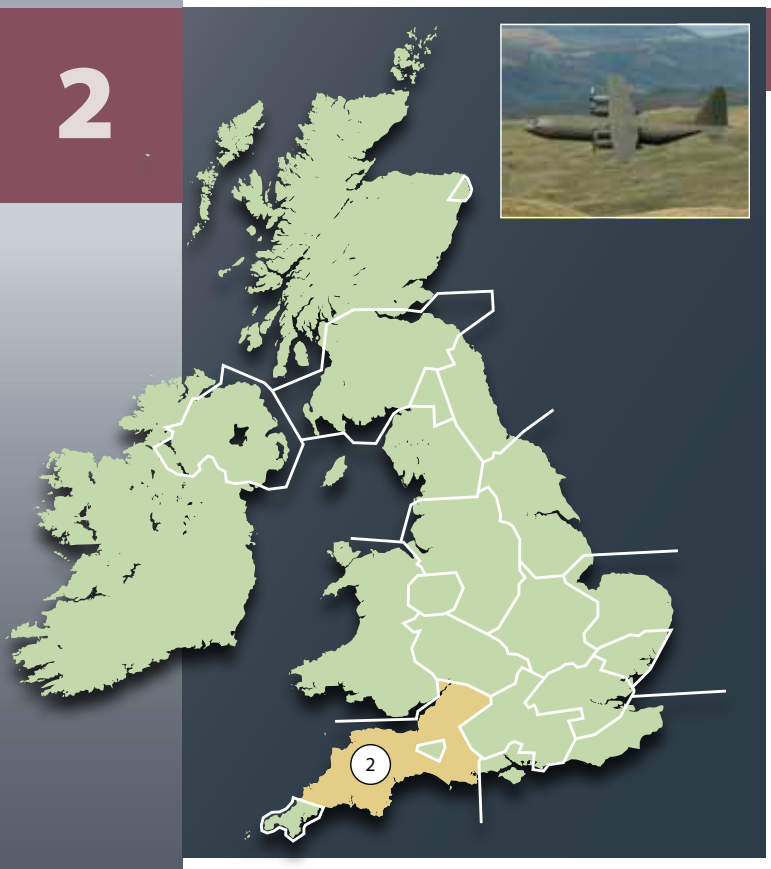

Low Flying Area 2

Low Flying Area 2 includes Devon, Dorset, Somerset, east Cornwall, southwest Gloucestershire and northwest Wiltshire. Major military units include RNAS Yeovilton, RAF Fairford, the Royal Naval Dockyard of Devonport, the Royal Marines barracks at Chivenor and Lympstone, and the Army training area on Dartmoor. Helicopters have a comparatively short range and this tends to restrict aircrew conducting low flying training on RN Lynx and Sea King helicopters based at RNAS Yeovilton to areas close to the airfield. In addition, Yeovilton-based aircraft can be seen transiting from their base to over-sea training areas. A significant number of Joint Helicopter Command helicopters train over Dartmoor, and Royal Marine Sea King helicopters routinely support training at Lympstone and Chivenor. Hercules transport aircraft are also a major user of LFA2 because a number of drop zones are maintained on Exmoor and Dartmoor. Low Flying Area 2 represents 7.98% of the total useable overland area of the UK Low Flying System.

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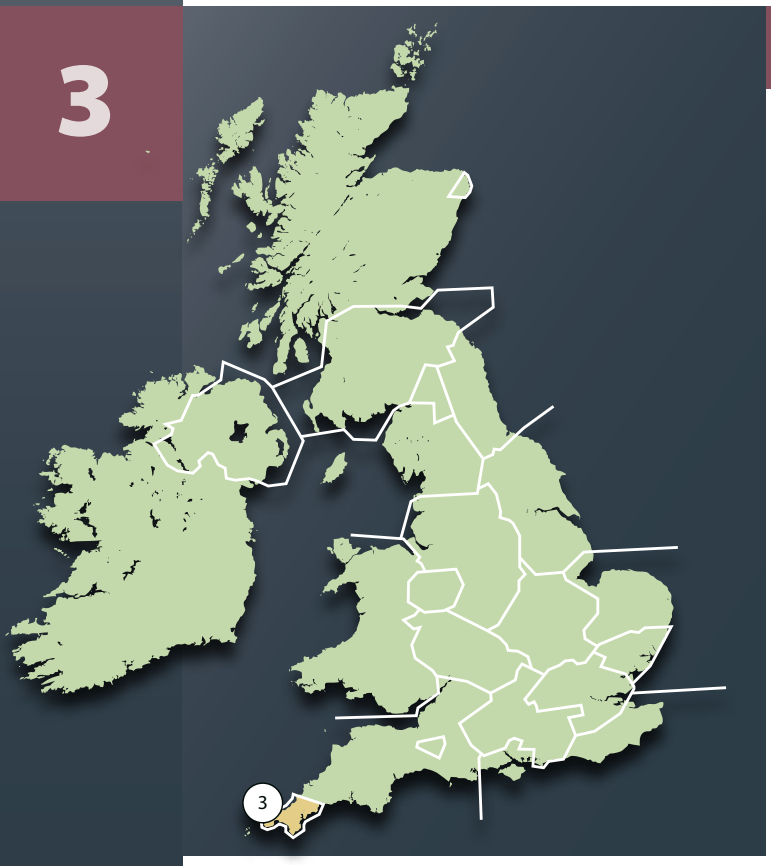
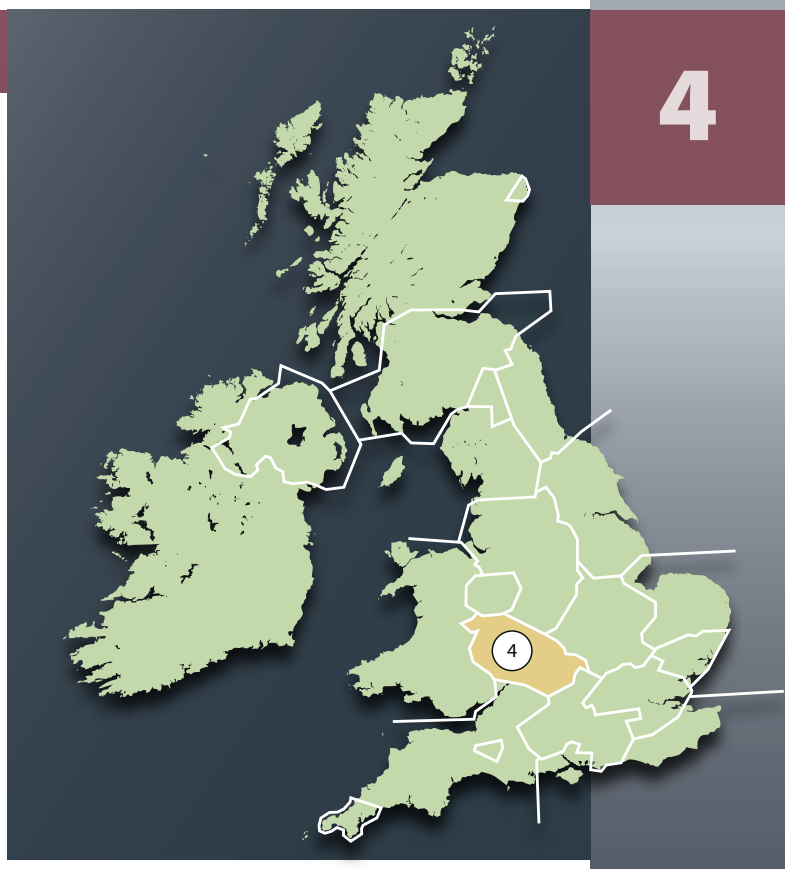


Low Flying Area 3

Low Flying Area 3 is situated in at the tip of southwest England, and is the Dedicated User Area for flying units based at RNAS Culdrose. RNAS Culdrose is host to both helicopter and fixed-wing training units that train pilots, observers and crewmen, as well as being a permanent base for operational helicopter squadrons that divide their time between their home unit and embarked service on RN warships worldwide. RNAS Culdrose is therefore a diverse main operating base and is one of the busiest flying stations in the UK. This Area represents just 0.47% of the total useable overland area of the UK Low Flying System.

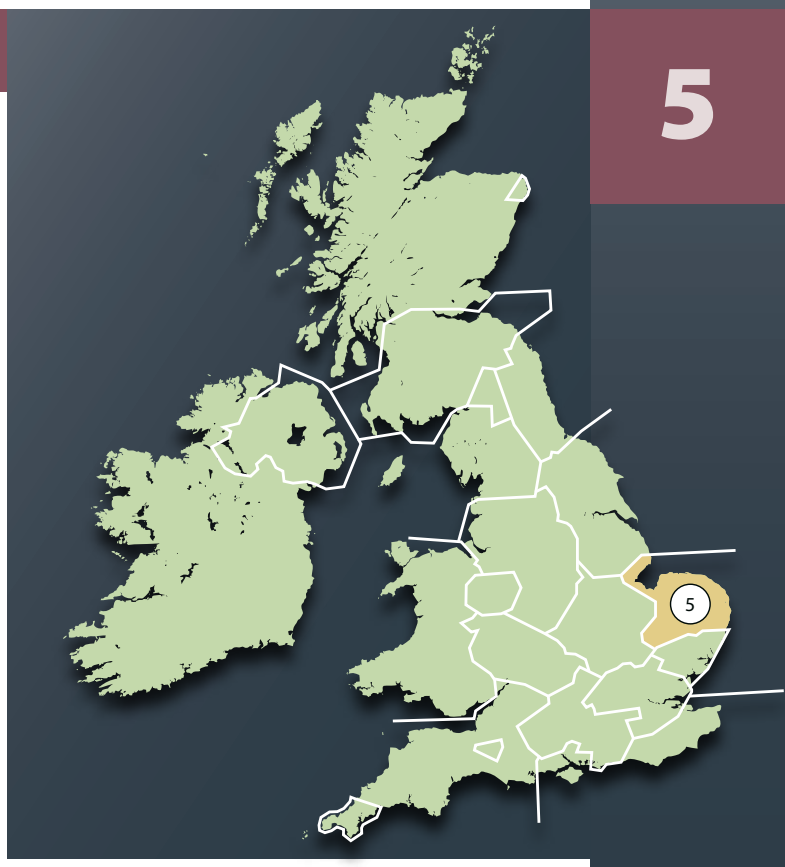
Low Flying Area 4

Low Flying Area 4 includes Herefordshire, Worcestershire, Gloucestershire, south Shropshire, southwest Warwickshire and west Oxfordshire. RAF Brize Norton is the only major flying station in the area. Other service establishments in this low flying area include RAF Weston-on-the-Green that is the home to parachute training, and the Army establishment at Hereford. This Area is predominantly used by fixed wing aircraft to transit to and from Wales and the South-West, and by helicopters in transit to Sennybridge training area and the Brecon Beacons. This Area represents 4.18% of the total useable overland area of the UK Low Flying System.



Low Flying Area 5

Low Flying Area 5 includes Norfolk, north Suffolk and most of Cambridgeshire. Major flying units within this Area are RAF Marham, RAF Mildenhall and RAF Lakenheath, together with the Air Weapons Range at RAF Holbeach. For ground training, the Army training centre at Stanford Training Area is of considerable significance. This is a relatively small area. Fixed-wing aircraft use the area to transit to the Air Weapons Ranges. Helicopter activity is generally associated with combined air and ground training activity on the Stanford Training Area. This Area represents 2.93% of the total useable overland area of the UK Low Flying System.



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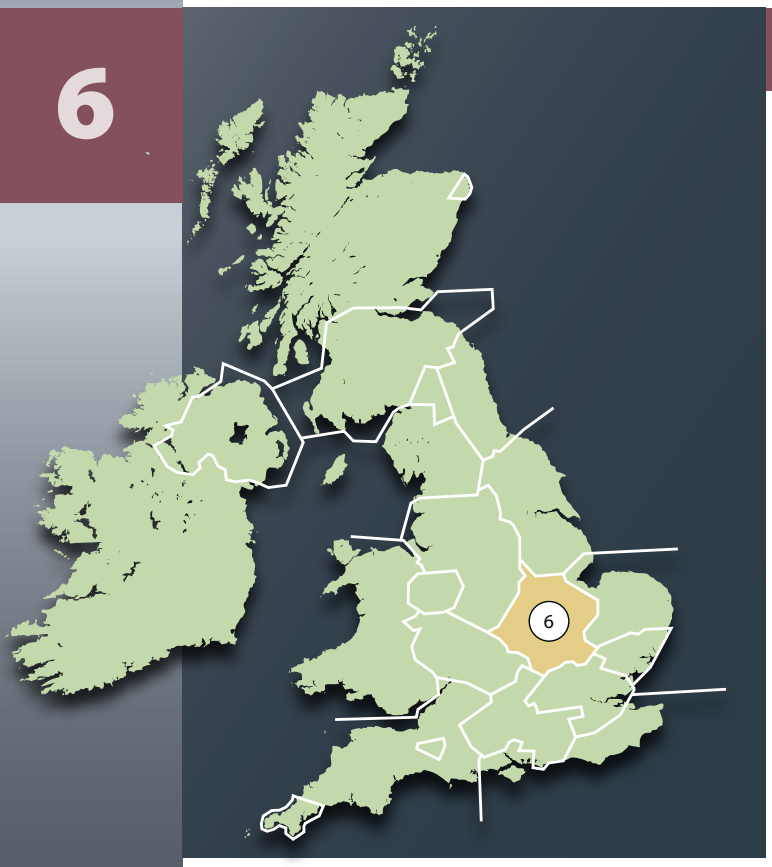

Low Flying Area 6

Low Flying Area 6 includes Northamptonshire, Bedfordshire, Rutland and parts of Leicestershire, Lincolnshire, Cambridgeshire, Buckinghamshire and Hertfordshire. The main Harrier operating base at RAF Wittering and support facilities at RAF Henlow, RAF Brampton and RAF Wyton, and Army units at Bassingbourn Barracks are located in the area. Much of the low flying activity in this Area involves aircraft transiting to and from their operating bases to the Air Weapons Ranges on the east coast. This Area is also used extensively by training aircraft based in Lincolnshire and Yorkshire. This Area represents 4.71% of the total useable overland area of the UK Low Flying System.

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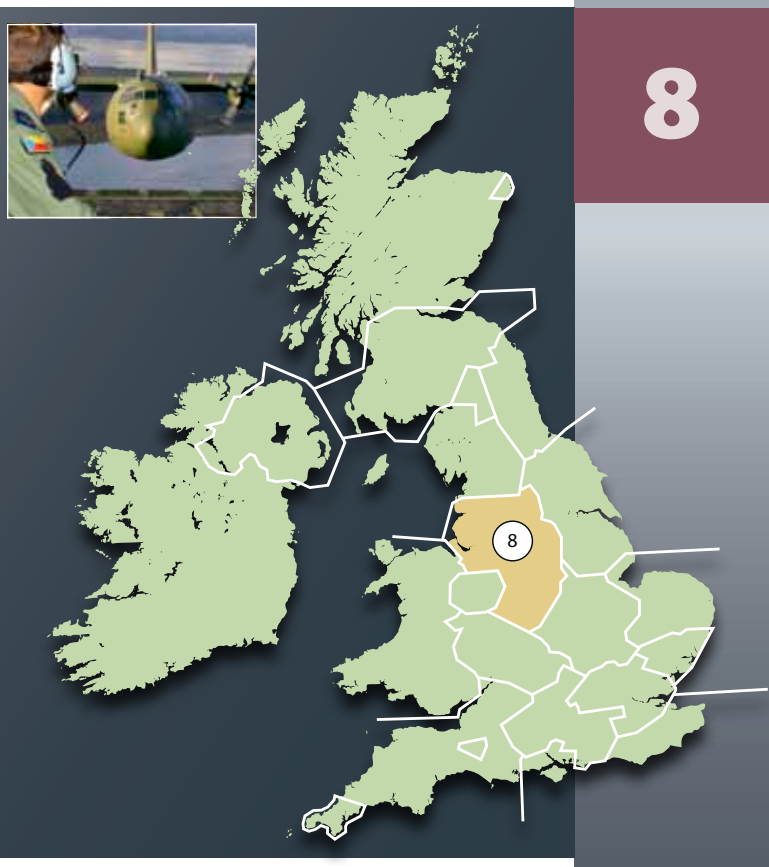
Low Flying Area 7

Low Flying Area 7 includes most of Wales except for the northeast of Powys. Military units in this Area include RAF Valley, MOD St Athan and the Air Weapons Range at Pembrey Sands; the Army Barracks at Brawdy and Field Training centres at Castlemartin and Sennybridge, together with the Royal Artillery range at Manorbier. The range at Manorbier, near Tenby, is frequently used for joint air and ground forces training activity. The Welsh landscape and the lack of controlled airspace that provides increased flexibility for military aircraft to enter or leave the lower airspace, combine to make Low Flying Area 7 important for military low flying training. RAF advanced fast-jet pilot training is carried out at RAF Valley using Hawk aircraft, and aircraft range limitations generally mean that most of the associated flying activity needs to be carried out locally, some of it using the Pembrey Range. Much of the helicopter activity is associated with Castlemartin and Sennybridge, RAF Search & Rescue training at RAF Valley, Support Helicopter and AAC aircrew pre-deployment training for overseas operations and the Defence Helicopter Flying School at RAF Shawbury in the adjacent Low Flying Area 9. This Area represents 9.57% of the total useable overland area of the UK Low Flying System.

Low Flying Area 8

Low Flying Area 8 stretches from the Ribble Valley and Forest Moor in the north, to Warwick in the south, and from the Wirral in the west to Doncaster and Nottingham in the east, Low Flying Area 8 has no major flying stations but is home to RAF Stafford and RAF Woodvale. Low Flying Area 8 contains the large avoidance areas of Liverpool/Manchester, Blackpool/Blackburn, Leeds/Bradford, Derby/ Nottingham and the West Midlands conurbation. In addition, there is controlled airspace immediately above the Area for civil air routes into the Region's international airports. Furthermore, the high moors of the Pennines are often subject to low cloud and mist. As a result, this Area is the least-used on the UK Mainland. This Area represents 4.41% of the total useable overland area of the UK Low Flying System.



Low Flying Area 9

Low Flying Area 9 is located primarily in Shropshire, but also extends into Powys, Clwyd and Staffordshire, and is a Dedicated User Area for helicopters of the Defence Helicopter Flying School based at RAF Shawbury. Most of the activity in this area is therefore helicopter flying training using Squirrel and Griffin helicopters, but RAF Shawbury is also home to the Central Air Traffic Control School that trains air traffic controllers and flight operations specialists. Also within this Area are DCAE Cosford and RAF Ternhill, that are used as Relief Landing Grounds by helicopters from RAF Shawbury. The Army Training Area at Nescliffe is also used to provide advanced helicopter training. This Area represents 1.78% of the total useable overland area of the UK Low Flying System.

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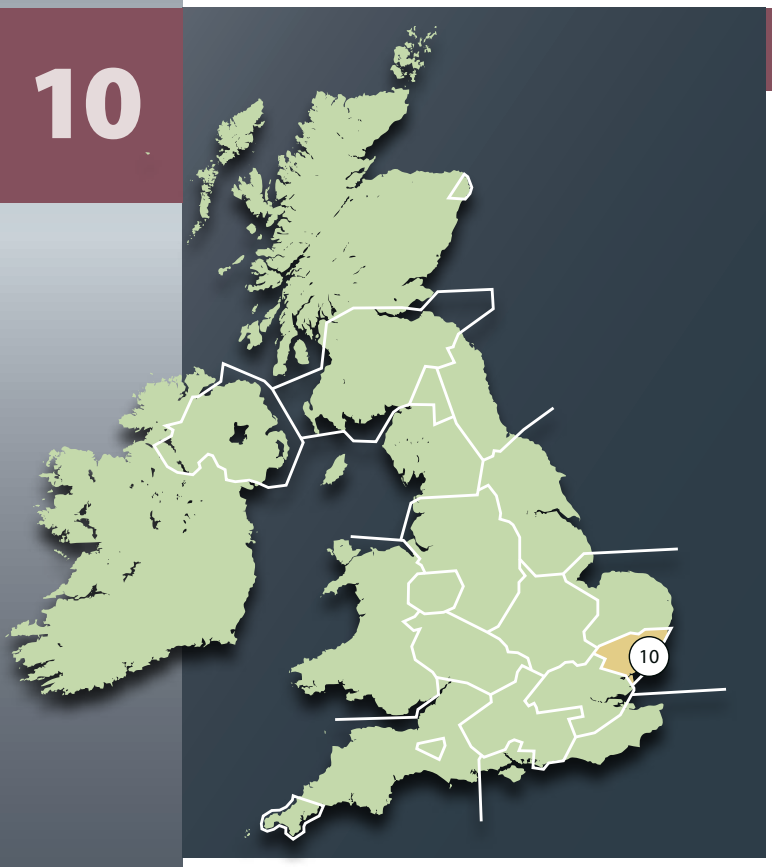

Low Flying Area 10

Low Flying Area 10 is located in Essex and Suffolk and is a Dedicated User Area for helicopters of the Army Air Corps based at Wattisham. Wattisham airfield is the main centre of Army Air Corps operational activity and home of the AH-64 Apache attack helicopter that is assigned to support 16 Air Assault Brigade based at Colchester. Almost all of the low flying activity within this Area is helicopter with just a small amount of fixed-wing flying, often by C-130 Hercules, taking place. This Area represents 1.78% of the total useable overland area of the UK Low Flying System.

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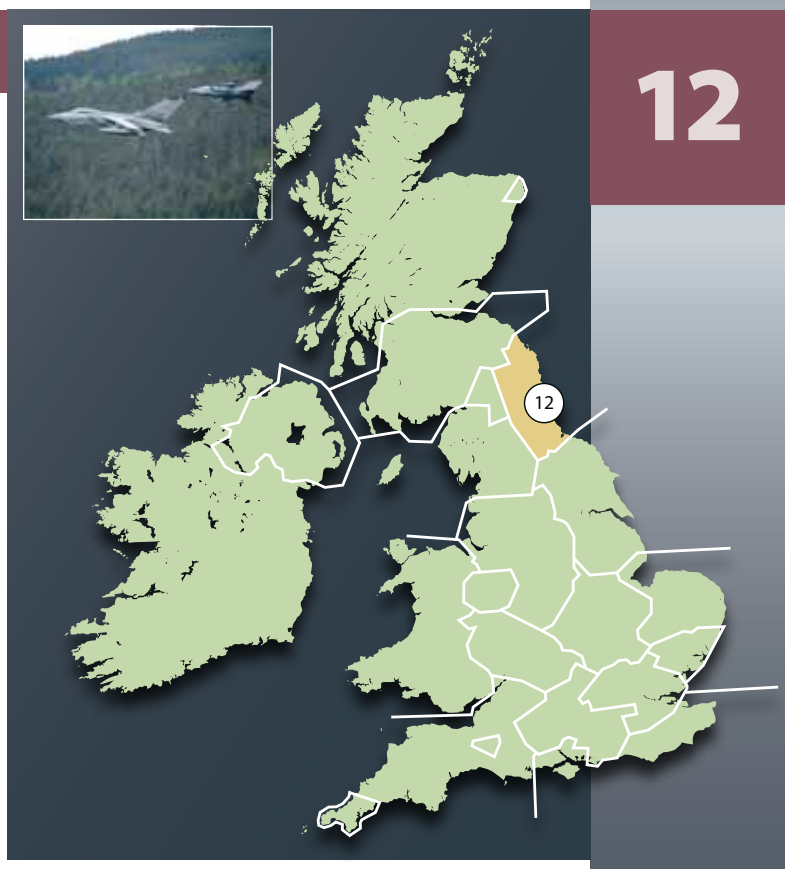
Low Flying Area 11

Low Flying Area 11 includes northeast Lincolnshire, northeast Nottinghamshire and east Yorkshire. This Area includes a diverse range of flying units at RAF Barkston Heath, RAF Coningsby, RAF Cranwell, RAF Leeming, RAF Linton-on-Ouse, RAF Waddington, and AAC Dishforth. There are in addition Relief Landing Grounds at RAF Church Fenton and RAF Topcliffe that are used by Tucano and other training aircraft. The busy Air Weapons Range at Donna Nook is also situated in this area. Historically, Lincolnshire and Yorkshire have been home to a large number of RAF stations but now only six major flying stations remain. The principal role for RAF Cranwell, RAF Barkston Heath and RAF Linton-on-Ouse, is flying training and their aircraft generally train locally. This Area is also used regularly by aircraft to and from the RAF Air Weapons Ranges on the Wash, and it is the home to the Royal Air Force Aerobatic Team, the Red Arrows. This Area represents 6.05% of the total useable overland area of the UK Low Flying System.

Low Flying Area 12

Low Flying Area 12 covers Northumberland, Durham and northeast North Yorkshire. Although there are no major flying stations in the area, other service establishments include the Army Field Training Centre at Otterburn, Albemarle Barracks at Ouston and RAF Air Defence Radar sites at Boulmer (which also houses an RAF Search & Rescue detachment) and Brunton. This Area is ideal for military low flying training. It contains some of the most challenging terrain for aircrew, has more unrestricted airspace above 2,000ft (giving increased flexibility to military aircraft to enter or leave lower airspace) than many other areas, is sparsely populated and generally experiences better weather than the west of the country. Aircraft using this Area will frequently also train at Otterburn Range or the Electronic Warfare Training Range at RAF Spadeadam. This Area represents 3.04% of the total useable overland area of the UK Low Flying System.



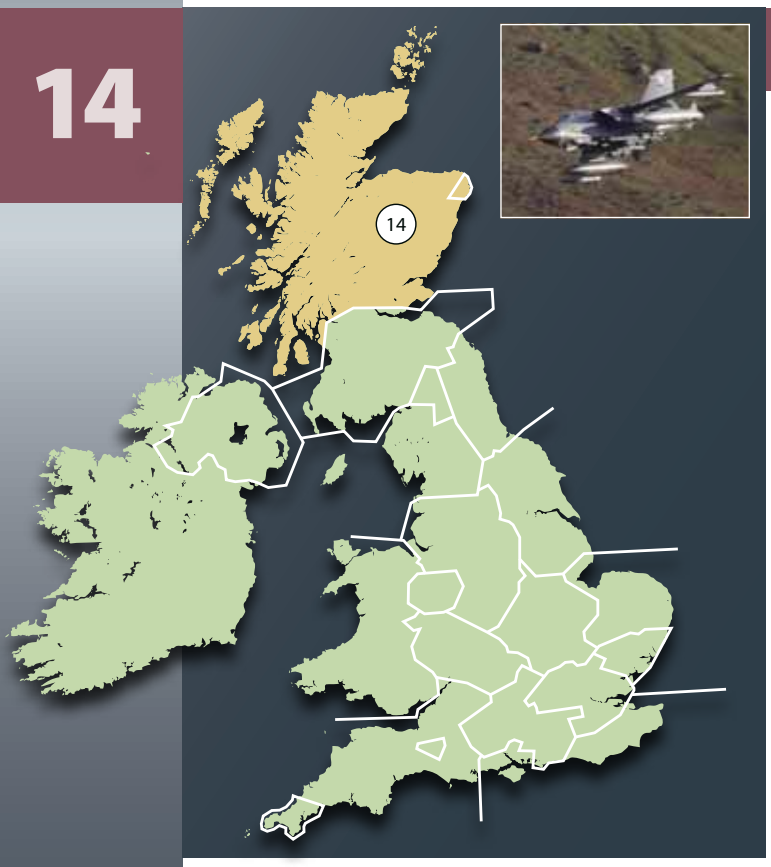
12

Low Flying Area 13

Low Flying Area 13 includes the south Borders Region, west Northumberland and northeast Cumbria. The Area is a Dedicated User Area solely for the use of aircraft using the RAF Spadeadam Electronic Warfare Training Range. This important facility provides an excellent standard of Electronic Warfare training for both fixed-wing aircraft and helicopters, and is also used during exercises by NATO and Allied air forces. This Area represents 1.03% of the total useable overland area of the UK Low Flying System.

13

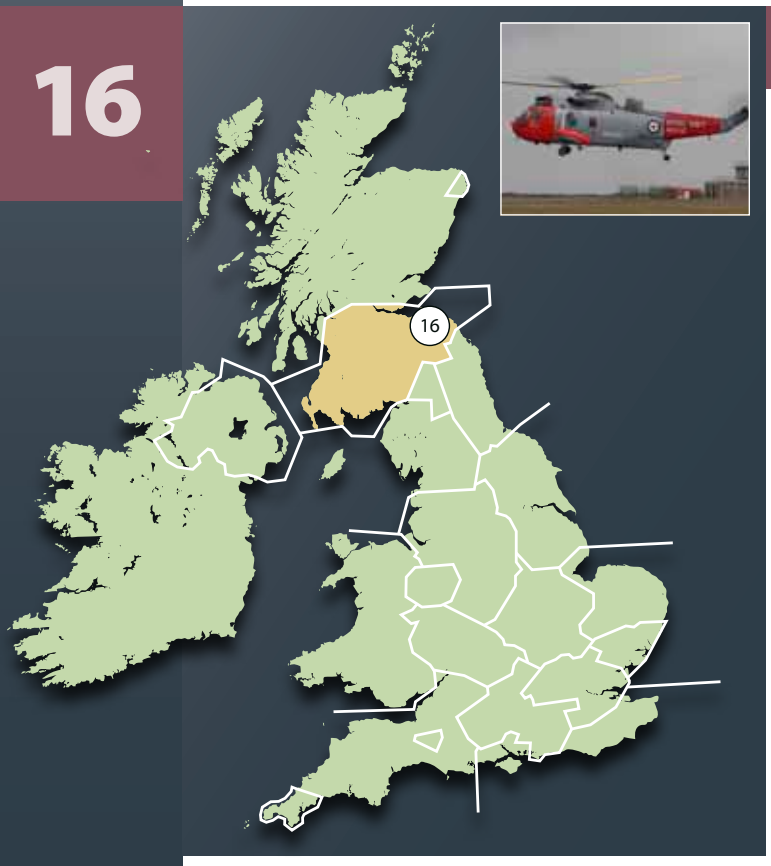
14



Low Flying Area 14

Low Flying Area 14 is the largest area in the UK and covers mainland Scotland north of the Central Region, the Western Isles, Orkney and Shetland. Within this Area are the major flying units at RAF Lossiemouth, RAF Kinloss and RAF Leuchars and the Air Weapons Range at Tain. In addition, there are Army Training Areas at Barry Buddon, Benbecula, Garelochhead and Inverness, the Royal Marines Barracks at Arbroath, and RN training areas at Cape Wrath and Loch Ewe. The use of this Area for low flying training depends on a number of operational, geographical and climatic factors. These include aircraft basing and transit distances; prevailing weather conditions; the location of military training areas, and the incidence of restricted airspace and built-up areas. Because of the size of this Area, training activity is well distributed. This Area represents 29.14% of the total useable overland area of the UK Low Flying System.

16

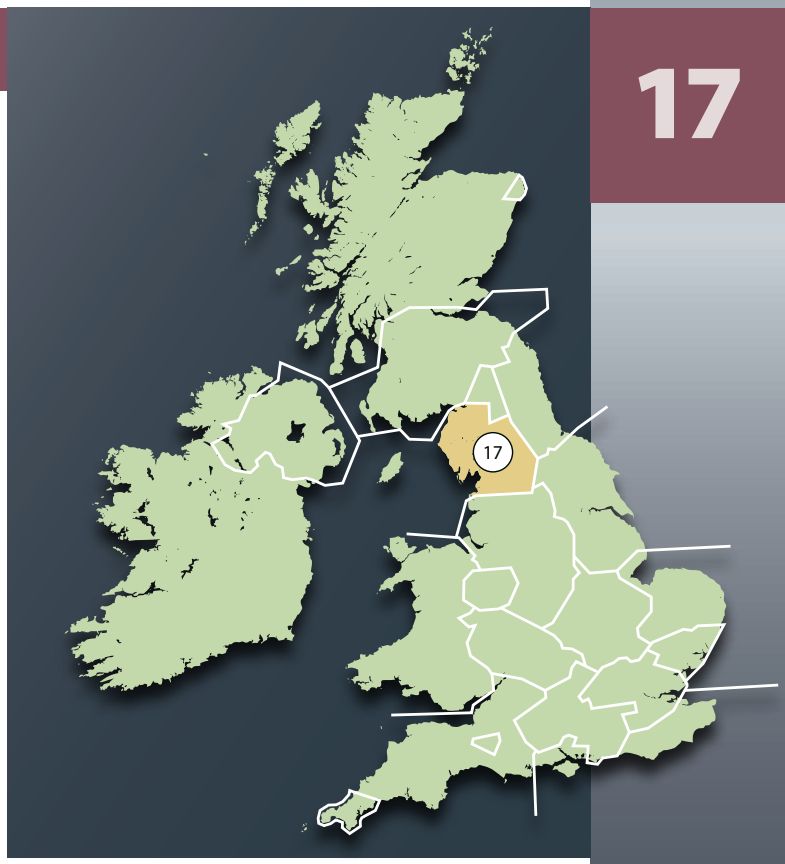


Low Flying Area 16

Low Flying Area 16 includes the Borders Region of Southern Scotland, Dumfries and Galloway and other counties up to and including those within the central belt. The RN helicopter base at Prestwick, the QinetiQ range facilities at West Freugh, and the Army training area at Kirkcudbright are located in the area. This is a good Area for low flying training. It has challenging terrain which, for the most part, is sparsely populated, a high incidence of unrestricted airspace above 2,000ft (giving increased flexibility to military aircraft to enter or leave the lower airspace) and better than average weather conditions. Additionally, the area is close to the Army Field Training Centre at Otterburn, and it borders on the Electronic Warfare Tactics range at RAF Spadeadam. This Area represents 8.17% of the total useable overland area of the UK Low Flying System.

Low Flying Area 17

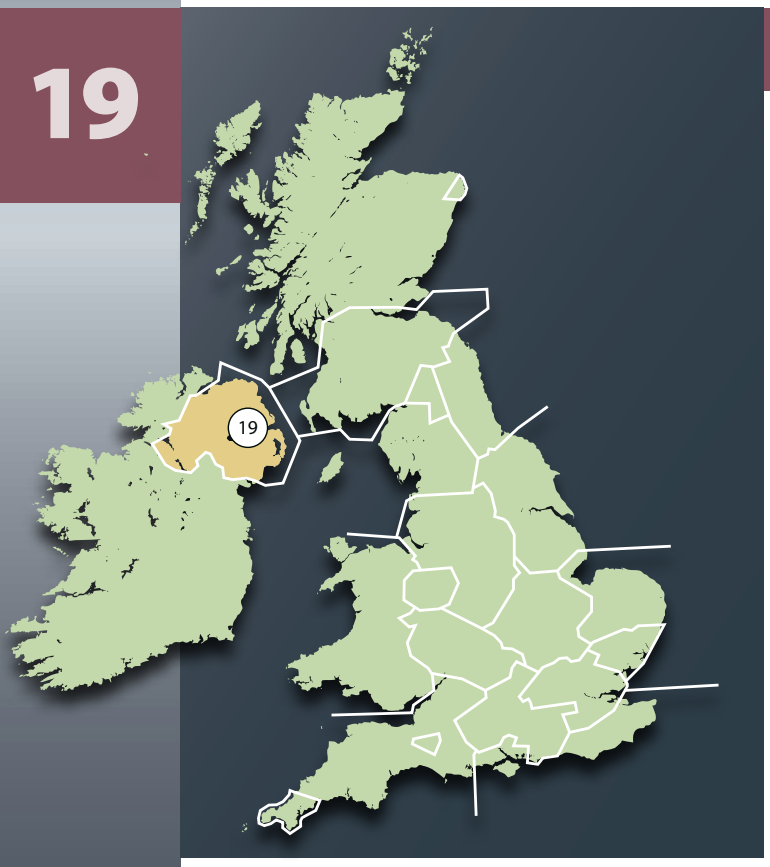
Low Flying Area 17 includes Cumbria, east North Yorkshire, and north Lancashire. Army Field Training Centres at Catterick and Warcop, along with QinetiQ range facilities at Eskmeals in the west of the Lake District are also located within this Area. The terrain in LFA 17 is valuable in terms of flying training practice, particularly for fast jet aircrew as the area is relatively free from large urban areas. RAF Spadeadam's Electronic Warfare and Tactics Range is located in adjoining Low Flying Area 13. In addition, this Area is used by Tucanos from RAF Linton-on-Ouse for flying training purpose. This Area represents 5.71% of the total useable overland area of the UK Low Flying System.



Low Flying Area 18

Low Flying Area 18 includes Kent, East Sussex and southeast West Sussex together with the Isle of Wight, and parts of Hampshire and Dorset. Military facilities in the area include the Royal Naval Dockyard at Portsmouth, the Royal Marine Base at Poole and the Army's Cinque Ports Field Training Centre. LFA 18 is cut off from the rest of the UKLFS by the Thames Valley Avoidance Area situated over Greater London and contains some of the busiest controlled airspace in the world in addition to a relatively large number of built-up areas and high levels of light aircraft traffic. All of these factors make it difficult for military aircraft, particularly fast jets, to use this area. This Area represents 1.72% of the total useable overland area of the UK Low Flying System.

19



Low Flying Area 19

Low Flying Area 19 is wholly located in Northern Ireland and is a Dedicated User Area for helicopters based at RAF Aldergrove. Following the cessation of Operation BANNER, this Area was brought into the UK Low Flying System and statistical recording is now conducted on the same basis as other Areas. This Area represents 4.22% of the total useable overland area of the UK Low Flying System.

Low Flying Issues

Low flying activity may have an effect on the general public and also the wider environment in which it takes place. The amount of low flying training conducted is limited to the minimum necessary to ensure operational readiness, and every effort is made to ensure that the effect of this training activity is minimised.

Alternatives to Low Flying Training in the UK

Where possible, simulators are used to provide high-fidelity training, including some low flying training. Simulators, however, as good they are and may become in the future, remain an artificial environment that do not replicate operating high performance aircraft close to the ground. In addition, the simulator environment does not allow full interoperability training, for example, a helicopter cannot interact with troops on the ground in the simulator environment. Equally, operating over the sea cannot provide effective training for aircrew to use the contours of the land. Some low flying training is exported outside the UK, but this is a very costly option, not just in terms of the expense of moving aircraft, equipment and people but also in the reduction in overall aircraft availability that this

can cause. Consequently, whilst other options are considered, there is currently no realistic alternative to live low flying training in the UK.

Safety

The safety of all airspace users and the community on the ground is of paramount consideration. Military flying training is rigorous and the standards extremely high. Aircrew are not permitted to fly at low-level until they are judged to be fully competent. Regulations for low flying training are respected, and reinforced by the covert monitoring and policing of the system. Close dialogue between military and civil aviation communities exists through a number of formal structures. Appropriate airspace division and regulation between military and civil users is achieved through the Airspace Utilisation Section of the Directorate of Airspace Policy within the Civil Aviation Authority, which is jointly staffed by military and Civil Aviation Authority personnel. The Ministry of Defence and Civil Aviation Authority operate a joint Civil Air Notification Procedure scheme that enables civilian aircraft and helicopters that need to operate in the low-level environment to secure temporary avoidance status for their specific tasks, for example pipeline inspection. In addition, there are a variety of joint committees and regular meetings, where views and suggestions on operating procedures and regulations are exchanged. Work continues with a number of groups representing users of the countryside to improve overall levels of safety.

Monitoring Low Flying

All low flying training is booked and recorded with the Low Flying Booking Cell at RAF Wittering. Levels of activity can be monitored and where complaints are received, aircraft can be readily traced. Covert monitoring by Service Police from the Defence Flying Complaints Investigation Team is conducted on up to 12 occasions each year. Monitoring utilises a Skyguard radar system fitted with high magnification video cameras designed to track low-level aircraft. The system is deployed to major exercise areas and other locations where complaints have been received from members of the public.

Environment

The Ministry of Defence is committed to safeguard the natural environment, both on its own estate and also throughout the UK. Our specialists within Defence Estates provide expert advice on environmental issues that are carefully considered in the formulation of low flying policy. Regular dialogue is maintained with environmental statutory bodies and a range of other organisations that have environmental interests or represent users of the countryside.

Noise

A major impact of low flying on the wider community is the potential disturbance caused by noise. Aircraft operating restrictions of height and speed are designed to ensure that damage to health cannot be caused. The potential impact of noise is reduced by restricting operating hours, and by dispersing low flying activity as widely as possible.

Low Flying and Renewable Energy

The Government is committed to increase the proportion of our energy needs produced from renewable sources, and a significant proportion will be produced through the use of wind turbines, both on and off-shore. The Ministry of Defence supports the Government's renewable energy targets whilst exercising responsibility for ensuring that National radar and communications systems are not compromised, and that necessary low flying can be conducted safely. The Ministry of Defence is therefore part of an extensive consultative and negotiation process

with wind-farm developers and RenewableUK, the organisation that represents wind-farm developers.

For low flying aircraft, off-shore wind-farms are less of a consideration as lower amounts of low flying are conducted over the sea. For on-shore wind-farms, there are two main issues: location and lighting. The location of any planned wind-farm development within the UK Low Flying System will determine how much effect there will be on low flying training, and particularly sensitive areas are the three Tactical Training Areas and the RAF Spadeadam Electronic Warfare Training Range. Lighting of wind-farms is carefully assessed to ensure that low flying aircraft can achieve safe obstacle clearance at night.

The Ministry of Defence Commitment to the Public

The Ministry of Defence is very conscious of the concerns of the wider community. For this reason a number of commitments to the public on military low flying are maintained. They are:

- To make every effort to limit disturbance to the community from low flying training.
- To restrict the amount of low flying training in the UK to that essential for aircrew to reach and maintain operational readiness.
- To continuously assess the need for low flying training in the UK.
- To examine all complaints about low flying individually and endeavour to provide a personal reply within 15 working days.
- To make every effort to provide prior warning of major exercises involving military low flying activity and advance notification of the time allocated for Operational Low Flying training.

Public Information

The Ministry of Defence seeks to maintain public awareness of the need for low flying through a variety of methods. A considerable amount of information on low flying and planned air exercises is published on the Low Flying section of the MOD website:

http://www.mod.uk/DefenceInternet/AboutDefence/WhatWeDo/AirSafetyandAviation/LowFlying/

This website provides annual statistics together with leaflets on low flying and horse-rider safety. A video presentation on low flying is available on request.

Regional Community Relations Officers promote awareness of military low flying, making presentations to interested groups and home visits on request.

A free-phone telephone number is available for members of the public to enquire about low flying activity in their area on a daily basis. The telephone number is 0800 51 55 44 and information on known fixed-wing and helicopter movements is available. Due to the high levels of activity close to helicopter training schools and main helicopter operating bases, it is not possible to provide a forecast for Dedicated Helicopter User Areas (Low Flying Areas 1, 3, 9, 10 and 19). The Ministry of Defence recognises there are limitations to the level of service it can provide, but will improve the level of detail that can be given to the public as technology allows. A separate telephone number is available for members of the public wishing to complain about military low flying activity.

A list of useful contacts can be found in the Statistical Appendix to this document.

Public Complaints

All complaints about military low flying are treated very seriously. No single measure causes a reduction in complaints. Rather, it appears to be a combination of several measures that include better information for the public about low flying activity, and in particular large exercises; and increased awareness amongst aircrew of the need to reduce the potential for disturbance wherever this is possible. The Ministry of Defence

will remain diligent and continue its efforts in this area.

Complaints may be made to local military units: Regional Community Relations Officers, or direct to the Low Flying Complaints and Enquiries Unit at the Ministry of Defence. Details of every complaint are recorded and, if appropriate, an investigation carried out to enable an appropriate response to the complainant.

Following receipt of a complaint, details are obtained from the caller and, in conjunction with the Low Flying Booking Cell, the aircraft is identified. Many complaints can be rapidly resolved, but in situations where the aircraft cannot be easily identified or there is a possibility that low flying regulations may have been contravened, the Defence Flying Complaints Investigation Team will be tasked to investigate. This team comprises specialist, experienced service police investigators who will conduct their investigation in accordance with the Police and Criminal Evidence Act (1984) and its associated procedures. Each investigation is tailored to the specific situation, and many can be resolved as an 'office enquiry' that establishes sufficient information to resolve the complaint. Where this is not possible, or in cases where the incident appears to be sufficiently serious, a 'full field' investigation is undertaken where investigators have unrestricted access to personnel, aircraft data and the national radar picture to enable reconstruction of an event to take place. On completion of their investigation, a police report is issued and any necessary action taken, whether this is of a disciplinary nature, or implementing recommended changes to low flying procedures.

The Ministry of Defence low flying complaints process is designed to provide a rapid and efficient response to members of the public and, except when complex investigations are required, replies to members of the public within the Citizen's Charter target of 15 working days.

The number of complaints received each year is shown in the statistical appendix.

Conclusion

The requirement for low flying by helicopters and transport aircraft during current operations is well established, and there continues to be a need for fast-jets to use the low-level environment for certain operational requirements. The pattern of low flying training reflects the Government's requirement to concentrate on success and safety within current operations, and to conduct continuation training for future contingencies as and when resources are available. The amount of low flying training conducted in the UK reflects the resources available for training activity, which is driven by the level operational deployment. Strict regulation and monitoring are in place to ensure that low flying training is conducted with the minimum level of disturbance possible to the public. The Ministry of Defence continues to work closely with a variety of groups and organisations to reduce the impact of low flying activity, and ensures effective communication of low flying activity to the public through its website and through the wider media.

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