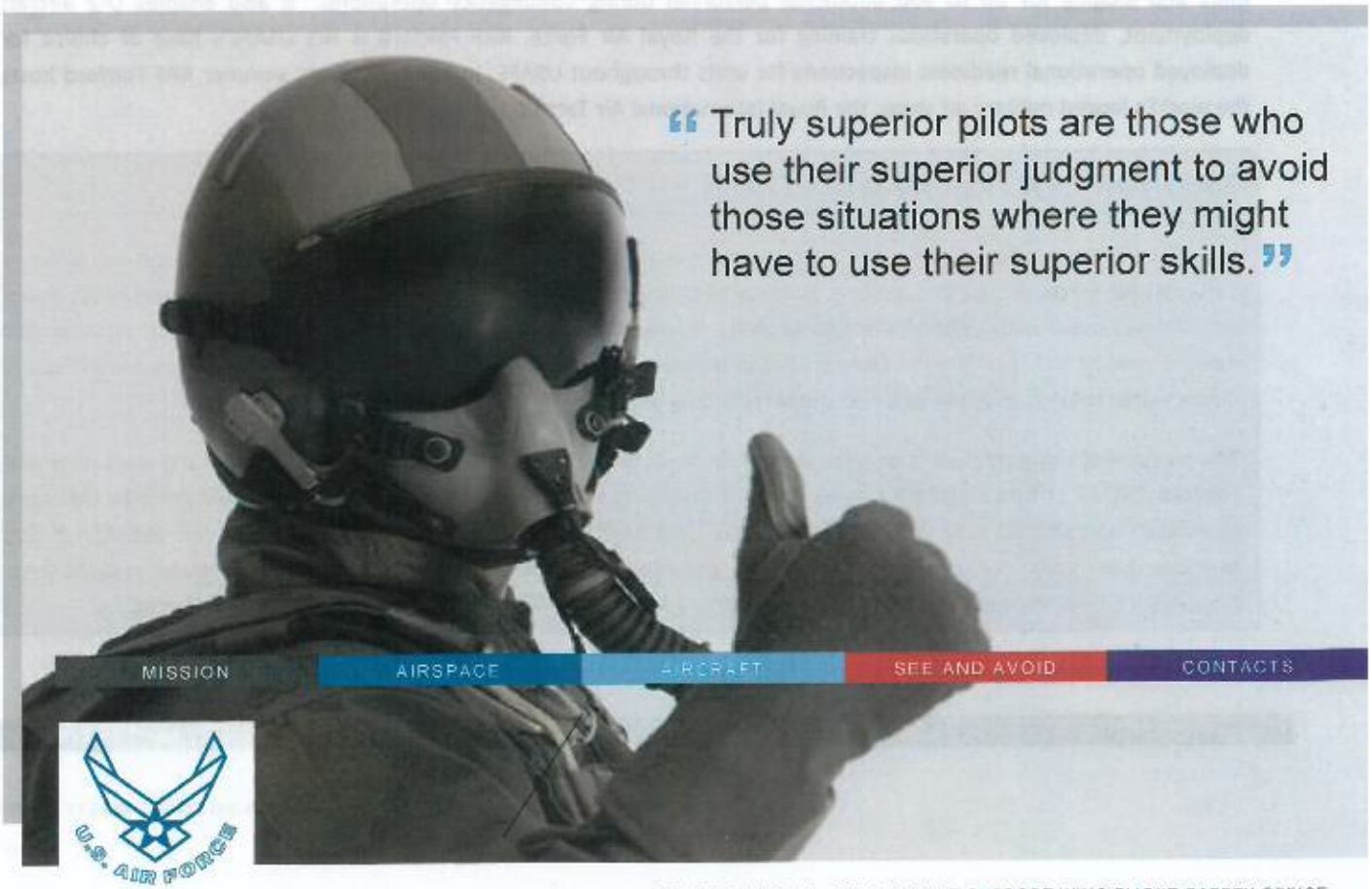
Mid Air Collision Avoidance

RAF Fairford, United Kingdom
April 2017

Our goal is to eliminate mid-air collisions and reduce close calls through continuous flight safety and proper flight planning.

By promoting information exchange between civilian pilots and the military flight safety community, we hope to help everyone safely share the skies.



☎ 01285 714589 | 501st COMBAT SUPPORT WING FLIGHT SAFETY OFFICE

OUR MISSION

420TH AIR BASE SQUADRON

RAF Fairford is the home of the 420th Air Base Squadron. The squadron's mission is to provide unparalleled mission support and to receive, sustain and bed-down munitions to enable U.S. and NATO warfighters to conduct full-spectrum flying operations from United States Air Forces in Europe's only bomber forward operating location.

RAF Fairford is a fully capable forward operating location. At 1,170 acres, and equipped with a 10,000 foot runway and a 10 million gallon JP-8 hydrant refueling system, the base provides 60 parking spaces for bombers or other aircraft, and secured hangar space for B-2 bombers. RAF Fairford provides full communications capabilities for visiting units and lodging for up to 900 additional personnel during contingency operations. It also enables U-2 aircraft deployment, deployed operations training for the Royal Air Force. RAF Fairford is HQ USAFE's base of choice for deployed operational readiness inspections for units throughout USAFE. In addition, every summer RAF Fairford hosts the world's largest military air show, the Royal International Air Tattoo.

MID-AIR COLLISION AVOIDANCE

Mid-air collisions are an area of vital concern to everyone who flies an airplane. The actual number of mid-air collisions between Air Force aircraft and general aviation aircraft is relatively low. However, 80 percent of reported Air Force near misses occur with general aviation aircraft. Because of the heavy concentration of both general aviation and military aircraft traffic within the Oxford Area of Intense Aerial Activity (AIAA), the 501st Combat Support Wing Safety Office wants to keep all pilots who use the surrounding airspace informed about our flying activities.

The purpose of this pamphlet is to alert you to the many areas of high mid-air collision potential in the skies near RAF Fairford (EGVA), United Kingdom in order to make our flying environment safer. This document will describe the types of military aircraft you may encounter and arrival and departure routes and traffic patterns at our airfield. It also provides information regarding mid-air collisions and ways we can all help avoid them as well as useful website links. Our Safety Office is committed to maintaining a strong, active Mid-Air Collision Avoidance (MACA) Program.

For more information about U.S. Air Force flight safety programs, visit the Air Force Safety Center website.

OUR AIRSPACE

RAF FAIRFORD FLIGHT OPERATIONS

RAF Fairford, located in the south east of Gloucestershire in the area known as the Cotswolds, is easily identifiable by the large number of concrete hard stands. The airfield is designated as a bomber forward operating location and therefore flight operations facilities are maintained on a limited status, under the 501st Combat Support Wing through the 422d Air Base Group. The runway remains closed unless opened by NOTAM.

During deployments and contingencies, RAF Fairford Control Tower operating hours will be determined to meet mission requirements and published via NOTAM. The Control Tower opens one hour prior to the first scheduled movement and remains open until 30 minutes after the last departure or after the last arrival has confirmed shutting down engines. During periods when the airfield is closed it is common for low flying military aircraft such as helicopters to transit the RAF Fairford Aerodrome Traffic Zone (ATZ) under the control of Brize Norton Air Traffic Control (ATC).

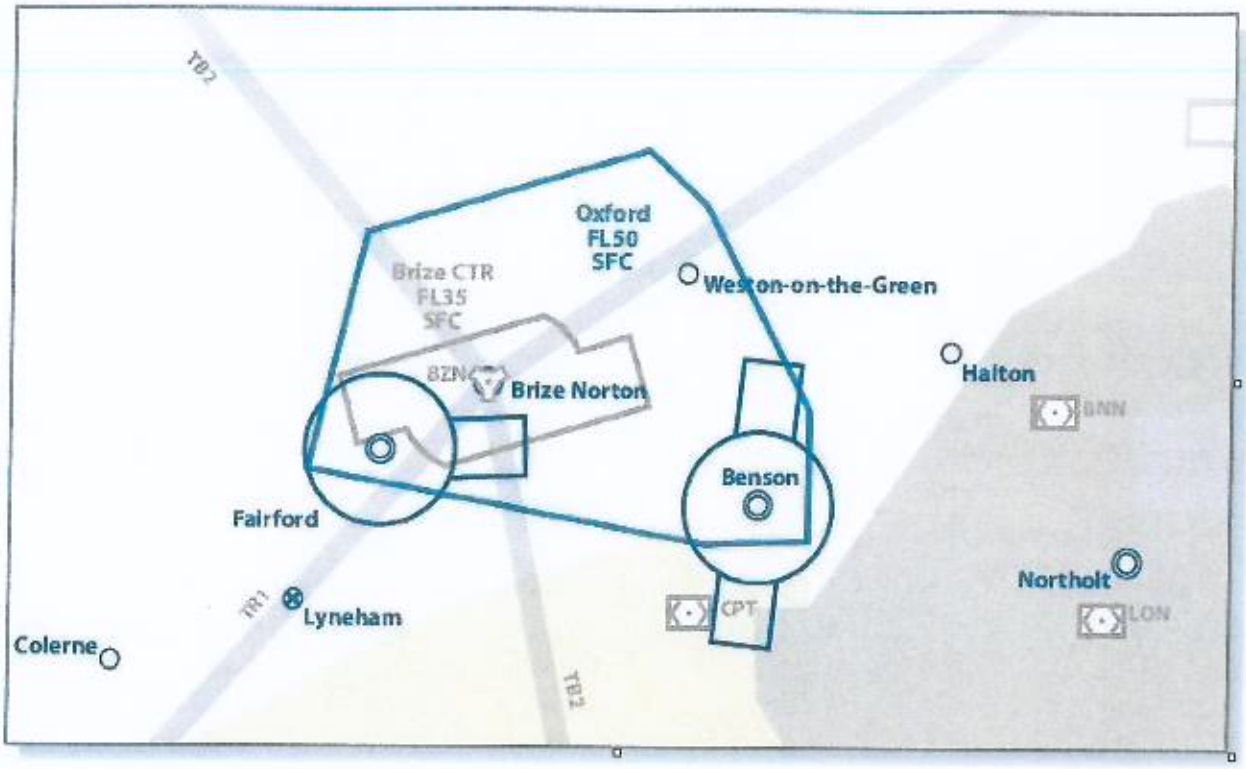
In the summer the airfield hosts the Royal International Air Tattoo (RIAT), which is the largest military airshow in the world featuring hundreds of historic and modern aircraft. In late June, aircraft arrive during what is known as 'The Longest Day'. As many as 200 aircraft arrive at the airfield to participate in the airshow. Due to the increase in air traffic and ongoing air displays, a specially designed airspace structure must be implemented for the duration of the event. Full details of restricted airspace will be promulgated by Aeronautical Information Circular (AIC) and NOTAM.

For more information and to download AICs and NOTAMs, visit the UK Aeronautical Information Service website.

OUR AIRSPACE

RAF FAIRFORD AIR TRAFFIC ZONES

RAF Fairford Aerodrome Traffic Zone (ATZ) extends from the surface to 2000 feet above ground level (AGL) with a radius of 2.5 nautical miles and is active 24 hours. RAF Brize Norton ATC (Brize Radar) is the controlling authority for the ATZ when RAF Fairford Control Tower is closed.



RAF Fairford Military Air Traffic Zone (MATZ) extends from the surface to 3000 feet AGL with a radius of 5 nautical miles. The Fairford MATZ Stub extends eastward from 1000 feet to 3000 feet (AGL) and 2 nautical miles on either side of the extended runway centerline for a distance of 10 miles. The RAF Fairford MATZ is activated by NOTAM. Control instructions from Brize Radar are mandatory for all military aircraft operating in the MATZ.

RAF Brize Norton Control Zone (CTR/CTZ) is an area of Class D airspace which extends from the surface to 3500 feet mean sea level (MSL) on RAF Brize Norton QNH and is active 24 hours unless closed by NOTAM. The RAF Brize Norton Control Zone is not to be confused with the Oxford Area of Intense Aerial Activity (AIAA) as you may transit through the Oxford AIAA without entering the Brize Norton CTR. It is also important to note that RAF Brize Norton has a Control Zone and not a MATZ. The Brize Norton Control Zone exists to allow the protection of large, un-maneuverable aircraft during the critical stages of recovery and departure. The most common aircraft arriving and departing RAF Brize Norton are the Airbus A330, Airbus A400M, Boeing C-17, and Lockheed C-130J.

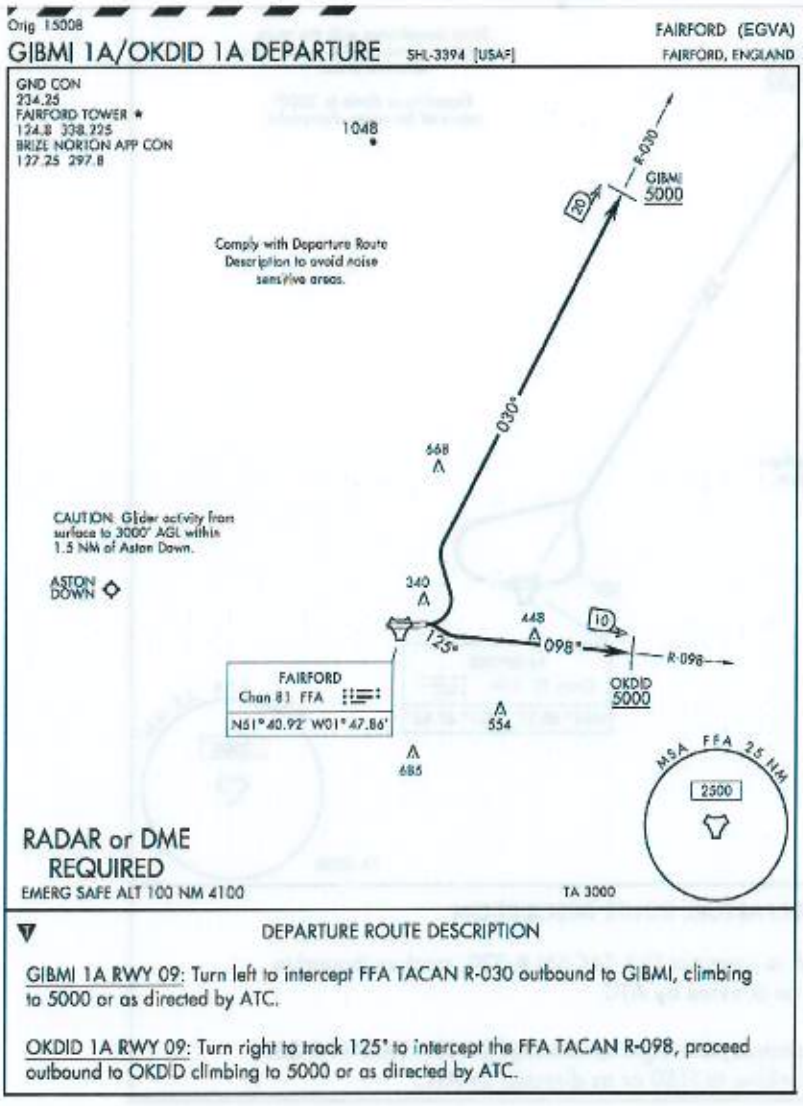
For more information about our airspace, download the MAA Defense Aerodrome Manual for RAF Brize Norton.

OUR AIRSPACE

IFR DEPARTURES

Instrument Flight Rule (IFR) arrivals and departures are controlled by Brize Radar, which provides continuous service unless closed by NOTAM. Radar service is provided from flight level 190 and below out to 60 nautical miles.

Inbound aircraft to RAF Fairford should call Brize Radar 30 nautical miles out or 10 minutes prior to entering the Brize Norton CTZ, whichever is earlier. If the departure aerodrome is too close for the call to be made 30 nautical miles out or I 0 minutes prior, the pilot in command shall contact Brize Radar before takeoff.



DEPARTURE ROUTE DESCRIPTION

GIBMI 1A RWY 09: Turn left to intercept FFA TACAN R-030 outbound to GIBMI, climbing to 5000 or as directed by ATC.

OKDID 1A RWY 09: Turn right to track 125° to intercept the FFA TACAN R-098, proceed outbound to OKDID climbing to 5000 or as directed by ATC.

Runway Selection Procedures
The Control Tower watch supervisor and/or senior controller selects the runway in use. Runway 27 is the primary instrument and calm wind runway. Use the runway most nearly aligned with the wind when the wind speed is 5 knots or more unless use of another runway will be operationally advantageous, or is requested by the pilot.

Circling Procedures
All circling maneuvers performed at RAF Fairford must be flown to the south due to RAF Brize Norton traffic patterns and noise abatement.

IFR Opposite Direction Traffic
Opposite direction operations may be authorized pending ATC approval. Brize Radar is the approving official for requests for opposite direction IFR departures at RAF Fairford. Fairford Tower is the approving official for requests for opposite direction IFR arrivals.

VFR Opposite Direction Traffic
Fairford Tower will coordinate with Brize Radar when aircraft request opposite direction operations and a VFR aircraft is in the Fairford Tower pattern.

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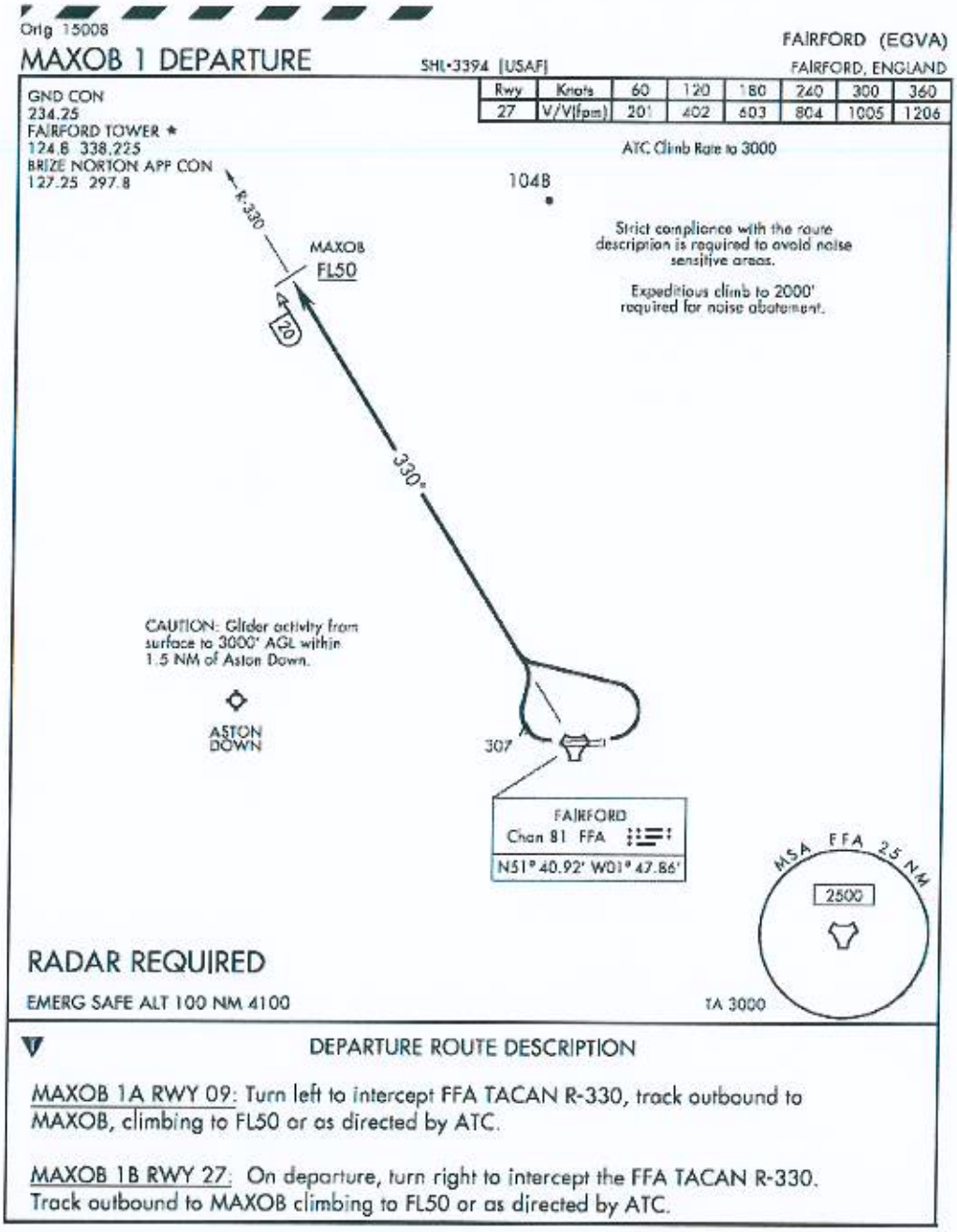
OUR AIRSPACE

IFR DEPARTURES

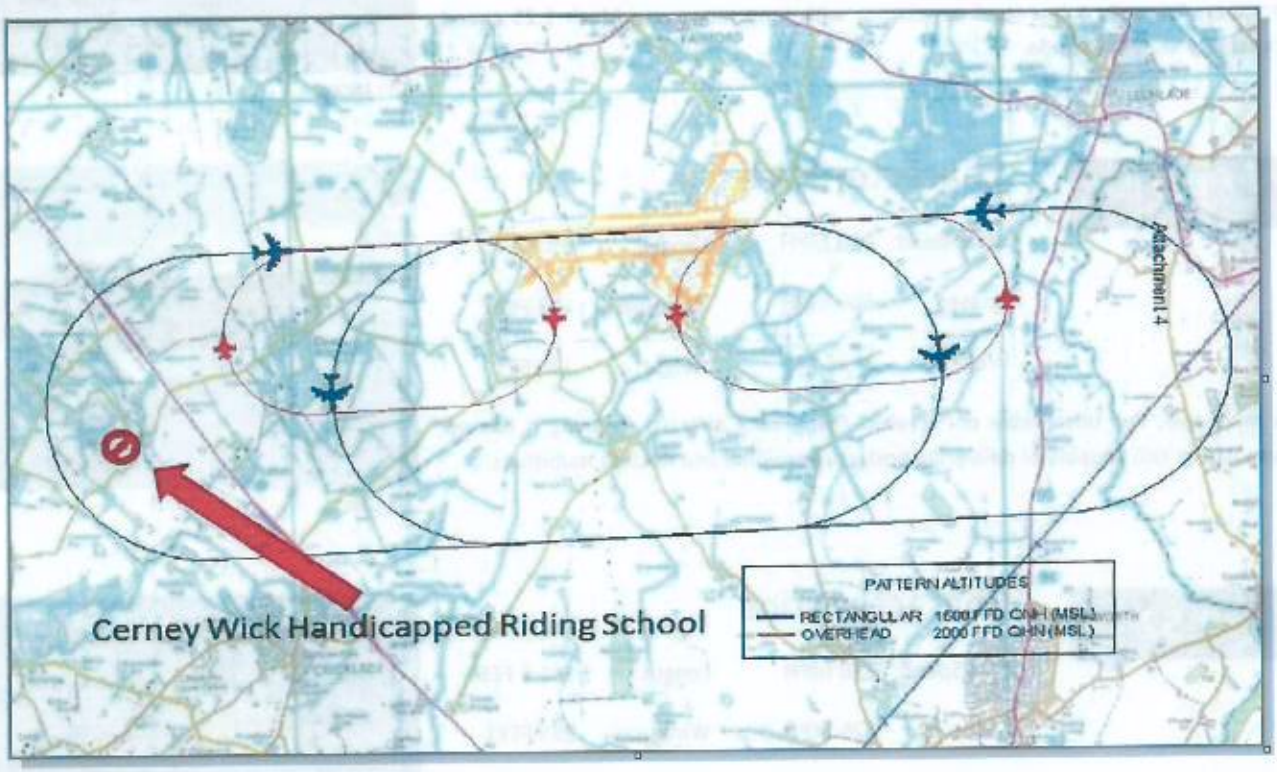


OUR AIRSPACE

VFR TRAFFIC PATTERN

Local VFR Traffic Patterns and VFR Flying Areas/Routes. The VFR weather minimums for aircraft to fly the local VFR patterns are: Visibility 5000 meters (3 miles) and ceiling of 2300 feet AGL for the overhead, 1800 feet AGL in the rectangular and 1300 feet AGL for light aircraft in the rectangular.

All patterns/restrictions are based on QNH. ATC shall ensure all NATO aircraft that normally use QFE in terminal airspace are at appropriate altitudes for traffic/obstacle separation and WX minimum when operating at RAF Fairford. When using overhead pattern, the Control Tower shall restrict all departing aircraft to maintain 1500 feet MSL until the departure end of the runway. All traffic patterns are flown south of the control tower unless otherwise direct by ATC.



VFR Rectangular

- Runway 27 - Left-hand traffic. Jet/conventional aircraft at 1500 feet MSL and light aircraft at 1000 feet MSL.
- Runway 09 - Right-hand traffic. Jet/conventional aircraft at 1500 feet MSL and light aircraft at 1000 feet MSL.

VFR Overhead. Aircraft may request radar vectors to initial through Brize Radar.

- Runway 27 - Left-hand traffic at 2000 feet MSL.
- Runway 09 - Right-hand traffic at 2000 feet MSL.

AIRCRAFT TRAFFIC

ROUTINE AIR TRAFFIC AT RAF FAIRFORD

B-1

Characteristics

Max Speed:	830 MPH	Length:	151.1 FEET
Low Level:	700 MPH	Wingspan:	136.7 FEET
Weight:	189K LBS	Height:	33.6 FEET

A four-engine supersonic variable-sweep wing, t-tailed, jet-powered strategic bomber. Primarily a low-level penetrator with long range and Mach 1.25 speed capability at high altitude.

B-1 LANCER

B-2

Characteristics

Max Speed:	630 MPH	Length:	69 FEET
Cruise:	560 MPH	Wingspan:	172 FEET
Weight:	158K LBS	Height:	17 FEET

A multi-role, low observable or "stealth" flying wing aircraft, meaning it has no fuselage or tail, capable of delivering both conventional and nuclear munitions.

B-2 SPRIT

B-52

Characteristics

Max Speed:	650 MPH	Length:	161.9 FEET
Cruise:	525 MPH	Wingspan:	185 FEET
Weight:	179.3K LBS	Height:	40.7 FEET

An eight-engine, 390,000-pound jet, long-range, swept-wing heavy bomber. B-52s have been modified for low-level flight, conventional bombing, extended-range flights and transport of improved defensive and offensive equipment.

B-52 STRATOFORTRESS

For more information about U.S. Air Force aircraft, download the Air Force Fact Sheet.

AIRCRAFT TRAFFIC

ROUTINE AIR TRAFFIC AT RAF FAIRFORD

C-17

Characteristics

Max Speed:	515 MPH	Length:	174 FEET
Cruise:	403 MPH	Wingspan:	169.8 FEET
Weight:	279K LBS	Height:	55.1 FEET

A high-wing, 4-engine, T-tailed military-transport aircraft, the multi-service C-17 can carry large equipment, supplies and troops directly to small airfields in harsh terrain anywhere in the world day or night.

C-17 GLOBEMASTER III

C-21

Characteristics

Max Speed:	542 MPH	Length:	48.7 FEET
Cruise:	481 MPH	Wingspan:	39.5 FEET
Weight:	9.6K LBS	Height:	12.3 FEET

A twin turbofan-engine aircraft used for cargo and passenger airlift. The turbofan engines are pod-mounted on the sides of the rear fuselage. The aircraft is the military version of the Lear Jet 35A business jet.

C-21 LEARJET

U-2

Characteristics

Max Speed:	500 MPH	Length:	63 FEET
Cruise:	429 MPH	Wingspan:	105 FEET
Weight:	16K LBS	Height:	16 FEET

A single-engine, single seat, long range ultra-high altitude reconnaissance aircraft providing day and night all-weather intelligence gathering. The aircraft has an initial climb rate of 15,000 feet per minute to around 25,000 feet and then uses a lower climb rate to achieve an altitude of 70,000 feet.

U-2 DRAGON LADY

For more information about U.S. Air Force aircraft, download the Air Force Fact Sheet.

SEE AND AVOID

COLLISION AVOIDANCE

See-and-avoid is recognized as the main method that a pilot uses to minimize the risk of collision when flying in visual meteorological conditions. It is an integral part of a pilot's 'situational awareness', in other words the skill involved in looking outside the cockpit or flight deck and becoming aware of what is happening around the aircraft.

Statistics show that mid-air collisions can occur in all phases of flight and at all altitudes. However, nearly all mid-air collisions occur in daylight and in excellent visual meteorological conditions. A collision is more likely where aircraft are concentrated, especially close to aerodromes and when one or both aircraft is turning, descending, or climbing.

Both experienced and inexperienced pilots can be involved in a mid-air collision. While a novice pilot has much to think about and so may forget to maintain an adequate look-out, the experienced pilot, having flown many hours of routine flight without spotting any hazardous traffic, may grow complacent and forget to scan.

There appears to be little difference in mid-air collision risk between high-wing and low-wing aircraft.

Stick to good airmanship; if you keep yourself and your aircraft in good condition, plan your route carefully, avoiding or noting likely busy areas, and develop an effective time-sharing scan system, you will have the basic tools for avoiding a mid-air collision.

For more information, download the European General Aviation Safety Team's Collision Avoidance pamphlet.

CONTACT US

420TH AIR BASE SQUADRON

Brize Norton CTZ

If you require a Control Zone transit you must call Brize Zone on frequency 119.0 to obtain permission to enter the Class D Airspace.

An ideal time to call Brize Zone is about 10 to 15 miles before entry into the Control Zone. The frequency and the controller can be busy at times so be prepared to standby with an instruction to "Remain outside the RAF Brize Norton Control Zone". The controller will get back to you as soon as possible and when asked to do so, pass your flight details as normal.

If you do not wish to enter the RAF Brize Norton Control Zone you may call Brize Radar on frequency 124.275 where you will be provided with a Lower Airspace Radar Service (LARS). LARS Service is subject to availability within the published hours (0900-1700 hours local time) and the LARS controller's capacity.

RADIO FREQUENCIES

	VHF	UHF
Brize Zone	119.000	
Brize Radar	124.275	277.075
Brize Approach (departures)	127.250	297.800
Brize Director (arrivals)	133.750	264.775
Fairford Tower	124.800	338.225

RAF FAIRFORD CONTACTS

Operations Support Flight facilities and personnel are on standby status 0730-1630 hours Monday to Friday.

Safety Office	01285 714589
Operations Support Flight	01285 714065

For general inquires about the 420th Air Base Squadron, please contact the 501st Combat Support Wing Public Affairs Office located at RAF Alconbury.

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