Ministry of Defence

The Pattern of Military Low Flying Across the United Kingdom 2019/2020

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This annual bulletin provides statistics on military low flying training activity conducted in the UK Low Flying System (UKLFS) for the Financial Year (FY) 2019/2020 (i.e. 1 April 2019 to 31 March 2020). Further detailed statistics and comparisons with earlier years can be found in the accompanying Excel tables.

The overall levels of Low Flying (LF), Operational Low Flying (OLF) and complaints are contained within this report. In addition, statistics are given for the 19 Low Flying Areas (LFAs), 3 Tactical Training Areas (TTAs), 13 Night Rotary Regions (NRRs), 5 Allocated Regions (ARs) and the Thames Valley Avoidance Area (TVAA).

Key Points and Trends

- In the FY 2019/2020 there were 34 638 hours of military low flying within the UKLFS, an increase of 1.7 per cent compared to 34 056 hours in FY 2018/2019.
- There were 34 587 hours of routine LF activity in FY 2019/2020, of which 8 329 hours was fixed-wing activity, and 26 258 was rotary-wing. Overall routine LF activity increased by 1.9 per cent, fixed-wing activity decreased by 32.8 per cent and rotary-wing activity increased by 21.9 per cent compared to the previous year.
- Of the 34 638 hours of routine LF activity in FY 2019/2020, 74.5 per cent was conducted during day light hours. Routine day LF activity increased by 2.0 per cent compared to the previous year, fixed wing activity decreased by 28.1 per cent and rotary wing increased by 20.4 per cent.
- Routine LF activity at night, 8 814 hours in FY 2019/2020, increased by 1.6 per cent compared to the previous year. Fixed wing activity decreased by 48.4 per cent and rotary wing increased by 25.9 per cent.
- Operational low flying accounted for 51 hours in FY 2019/2020, 0.1 per cent of all LF activity.
- The Ministry of Defence Low Flying Complaints and Enquiries Unit (LFCEU) received 619 complaints in FY 2019/2020, a decrease of 13.2 per cent compared to the previous year.

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Background quality report: Background Quality Report
Would you like to be added to our **contact list**, so that we can inform you about updates to these statistics and consult you if we are thinking of making changes? You can subscribe to updates by emailing Analysis-Publications@mod.gov.uk

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Introduction

Military fixed wing aircraft, including Tucano aircraft, are assessed to be low flying when operating below 2,000 feet Above Ground Level (AGL); helicopters and light propeller driven aircraft are assessed to be low flying when below 500 feet AGL. Due to their role helicopters may operate down to ground level for specific training activities.

The Day UKLFS consists of 19 Low Flying Areas (LFAs), 3 Tactical Training Areas (TTAs) and the Thames Valley Avoidance Area (TVAA). The Night UKLFS is different from that used by day; it comprises 13 NRRs (located in the south of the country and predominately used by rotary aircraft), 5 ARs (mostly located in the north of the country and predominantly used by fixed wing aircraft) and the TVAA(N).

This report aims to provide interested parties with the usage of the UKLFS in total and the volume of low flying within day and night low flying areas. Maps of the day and night low flaying areas are included at Annex A and B.

Low flying is permitted across the majority of the UK except for major built-up areas (cities, towns and larger settlements with a population of over 10,000), civil airports and certain key industrial and medical sites.

Further information on low flying can be found on the Gov.uk website at the following link:

https://www.gov.uk/low-flying-in-your-area/overview

Statistics on military low flying training for previous years are available on the Gov.uk website at the following link:

https://www.gov.uk/government/collections/the-pattern-of-military-low-flying-across-the-uk-index

There is a continuing requirement for UK Armed Forces to operate successfully in the low-level environment. To ensure that UK forces are capable of meeting the operational task, low flying training is conducted in the UK before aircrew deploy to operational theatres. Responsiveness alone is not enough; it must be backed up by a credible and practised military capability and it is on this foundation of military readiness that the need to train regularly is built. Low flying is a perishable skill that can only be perfected and maintained

through rigorous training and continuous practice in a realistic environment. Low flying skills are used to protect the Nation. This includes assisting in peace-keeping and providing humanitarian support, as well as providing support and assistance to the UK's civil authorities on request.

Military aircrew train at low level within a clear regulatory framework that sets out what activities they are authorised to conduct, and what limitations are placed on those activities. The safety of the public, crews, and aircraft is of paramount concern. The regulations and limitations are designed to ensure that training is appropriate for the operational task, and is conducted so that all risks to life are mitigated to a level that is both tolerable and as low as reasonably practicable, with minimum potential for disturbance to the public. Low flying regulations can be found at the following link:

https://www.gov.uk/government/publications/regulatory-article-ra-2330-low-flying

Foreign military forces, including the UK-based United States Air Force Europe units, may fly within the UKLFS under the principle of reciprocity, and must comply with the same regulatory framework as UK aircraft.

All flying activity in the UKLFS must be specifically authorised and the vast majority booked in advance as part of aircrew planning to avoid conflict with other aircraft. Flying units are required to subsequently provide booking returns with actual times and low flying areas utilised. Detailed information on actual routes flown is not provided to MAMC.

Further information can be found in the Background Quality Report

Low Flying

Total low flying in UKLFS

The combination of both routine and operational low flying hours is 34 638 hours of low flying within the UK Low Flying System for the FY 2019/2020, an increase of 1.7 per cent compared to the previous year.

Operational Low Flying only takes place in 3 TTAs where fixed wing aircraft can operate between 250 feet MSD and 100 feet MSD. Routine low flying for fixed wing aircraft is from 250 feet MSD to 2,000 feet MSD.

Total Low Flying	Routine Low Flying (hours)	Operational Low Flying (hours)	Total hours
2016-2017	**29 554**	166	29 720
2017-2018	**29 024**	126	29 150
2018-2019	**33 931**	125	34 056
2019-2020	**34 587**	51	34 638

Routine low flying

The amount of routine low flying, shown in hours flown, is given in the table below.

Routine Low Flying	Fixed Wing (hours)	Rotary Wing (hours)	Total hours
2016-2017	9 054	20 500	29 554
2017-2018	6 798	22 227	29 024
2018-2019	12 390	21 541	33 931
2019-2020	8 329	26 258	34 587

In FY 2019/2020, fixed-wing activity accounted for 24.1 per cent and rotary-wing 75.9 per cent of the 34 587 hours of routine LF activity.

Total routine LF activity rose by 1.9 per cent.

Fixed-wing activity decreased by 32.8 per cent from the previous year. The decrease in fixed wing flying at low level is due in part to the drawdown of the Tornado fleet, which conducted a significant amount of training at low level in UK airspace.

Rotary-wing activity increased by 21.9 per cent compared to the previous year. This is due to increased availability of training and frontline aircraft types, including the Juno and Jupiter aircraft which have now been brought fully into service, which has allowed more essential routine training to take place. There has also been a small increase in pre-deployment training.

Day low flying

Of the routine LF activity in FY 2019/20, 74.5 per cent was conducted during day light hours. The amount of routine day time low flying conducted in the FY 2019/2020, shown in hours flown, is given in the table below.

Day Low Flying [1]	Fixed Wing (hours)	Rotary Wing (hours)	Total hours
2016-2017	7 190	15 074	22 264
2017-2018	6 228	17 045	23 272
2018-2019	9 552	15 705	25 258
2019-2020	6 865	18 908	25 773

[1]Routine- excludes operational

In FY 2019/2020, fixed-wing activity accounted for 26.6 per cent and rotary-wing for 73.4 per cent of day time low flying hours.

Routine day LF activity increased by 2.0 per cent compared to the previous year, fixed wing activity decreased by 28.1 per cent and rotary wing increased by 20.4 per cent.

Night low flying

The amount of night time low flying conducted in the FY 2019/2020, shown in hours flown, is given in the table below. Night time activity accounted for 25.5 per cent of routine low flying.

Night Low Flying	Fixed Wing (hours)	Rotary Wing (hours)	Total hours
2016-2017	1 864	5 426	7 290
2017-2018	570	5 182	5 752
2018-2019	2 837	5 836	8 674
2019-2020	1 464	7 350	8 814

In FY 2019/2020, fixed-wing activity accounted for 16.6 per cent and rotary-wing 83.4 per cent of night time low flying activity

Routine LF activity at night increased by 1.6 per cent compared to the previous year. Fixed wing activity at night decreased–by 48.4 per cent. Rotary wing activity increased by 25.9 per cent.

Operational low flying

The amount of operational low flying conducted in the FY 2019/2020 is shown in the table below. Operational low flying accounted for 0.1 per cent of all LF activity, reflecting a decrease of 59.1 per cent from the previous year. As is the case for routine low flying, the drawdown of the Tornado fleet has also led to a decrease in OLF.

Operational Low Flying	LFA 7(T) Wales (hours)	LFA 14(T) Scotland (hours)	LFA 20(T) Borders (hours)	Total hours
2016-2017	4	65	98	166
2017-2018	4	31	91	126
2018-2019	7	45	73	125
2019-2020	0	17	34	51

The timetable of planned operational low flying is published on the Gov.uk website at the following link:
https://www.gov.uk/government/publications/operational-low-flying-training-timetable

TVAA (Thames Valley Avoidance Area)

The Thames Valley Avoidance Area covers the Greater London area where restrictions are imposed on military flying due to population density and aerial congestion. The amount of day and night low flying conducted in the TVAA in the FY 2019/2020 is given in the table below, and accounts for 1.7 per cent of all LF activity during this period.

TVAA Low Flying	Fixed Wing	Rotary Wing	Total
2016-2017	66	428	494
2017-2018	22	557	579
2018-2019	90	636	726
2019-2020	26	568	593

Further statistics for day and night time low flying activity for individual areas can be found in the accompanying Excel Tables.

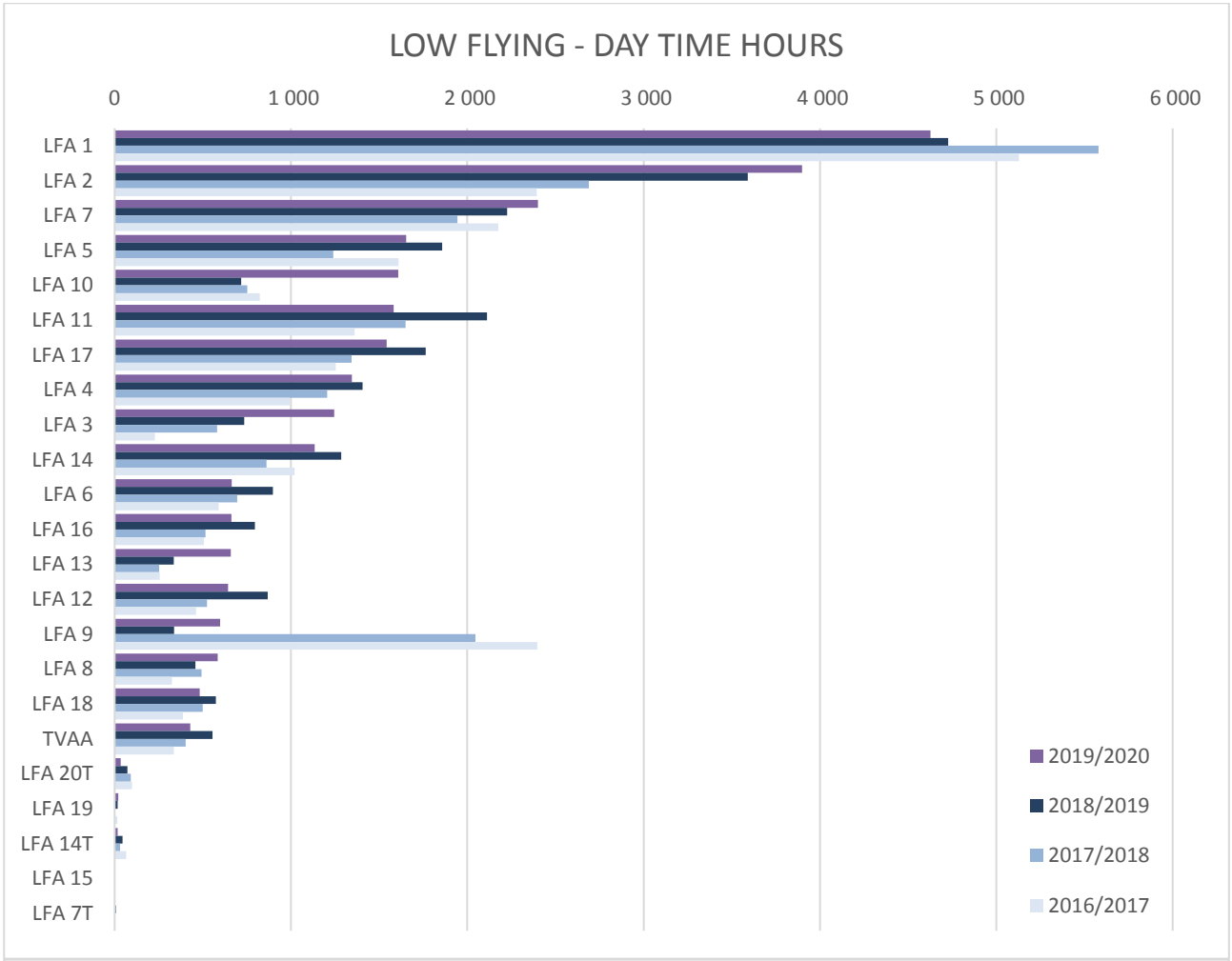
Low flying activity by area

The Charts below show the hours flown, day and night, ranked by LFA for FY 2019/2020 compared to previous years.

The intensity of low flying activity varies by area, LFAs 1 and 2 rank higher than other day areas and NRR1 and NRR2 greater than other night areas. This reflects the geographical location of air bases and types of aircraft. Rotary wing aircraft by their nature (speed, range, etc.) are less likely to go ‘further afield’ and more likely to conduct sorties in the local area, due to the availability of airspace and fuel options.

It should be noted that the figures for activity in the DUAs for FY 2019/2020 now comprise a combined total of manual returns plus automated figures, and consequently they are not directly comparable with previous years.

It should also be noted that, as for FY 2018/2019, due to staffing shortages manual returns were not available for DUA LFA9, consequently the data for both financial years is not as accurate as that previously published.


LOW FLYING - DAY TIME HOURS
0
1 000
2 000
3 000
4 000
5 000
6 000
LFA 1
LFA 2
LFA 7
LFA 5
LFA 10
LFA 11
LFA 17
LFA 4
LFA 3
LFA 14
LFA 6
LFA 16
LFA 13
LFA 12
LFA 9
LFA 8
LFA 18
TVAA
LFA 20T
LFA 19
LFA 14T
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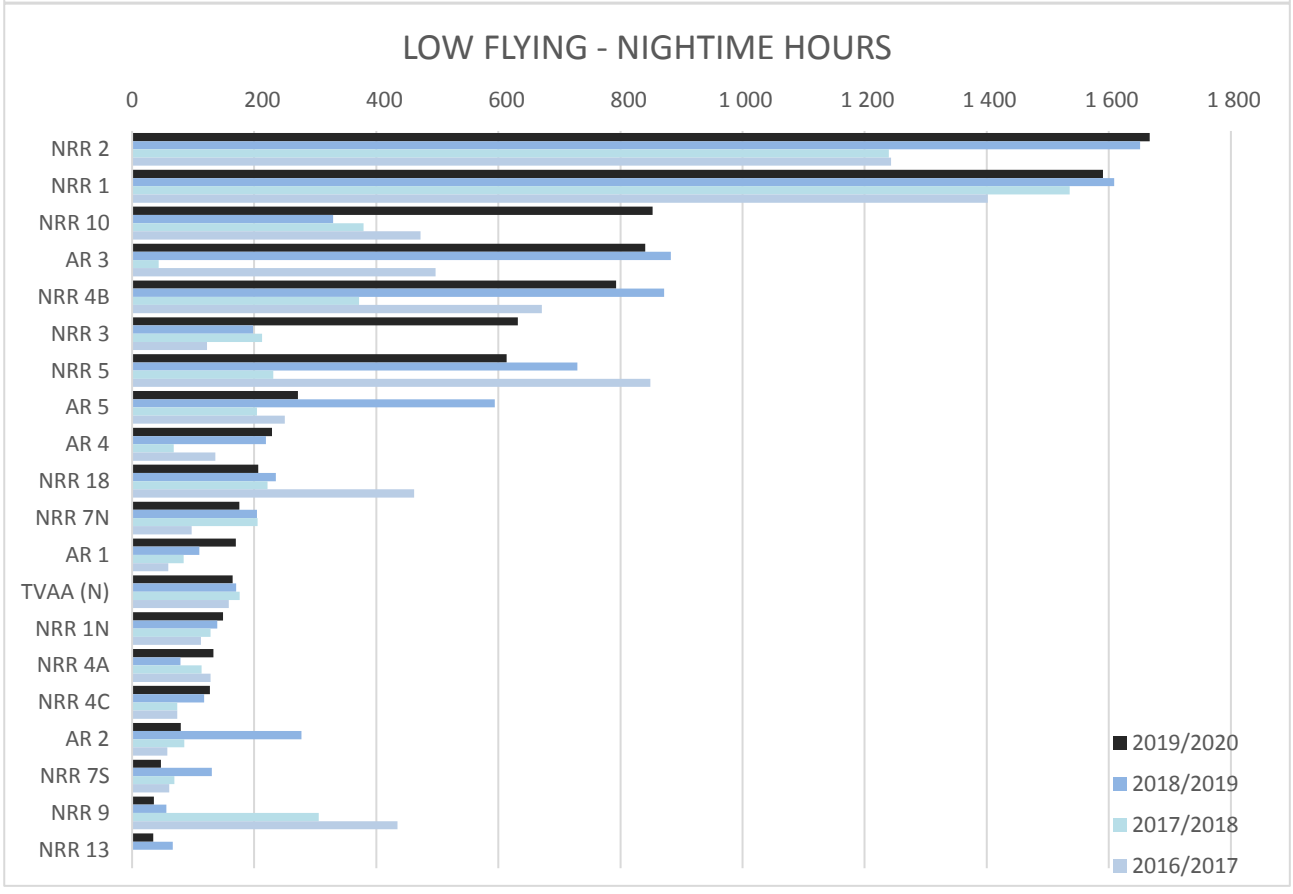
LFA 7T
2019/2020
2018/2019
2017/2018
2016/2017


LOW FLYING - NIGHTIME HOURS
0
200
400
600
800
1 000
1 200
1 400
1 600
1 800
NRR 2
NRR 1
NRR 10
AR 3
NRR 4B
NRR 3
NRR 5
AR 5
AR 4
NRR 18
NRR 7N
AR 1
TVAA (N)
NRR 1N
NRR 4A
NRR 4C
AR 2
NRR 7S
NRR 9
NRR 13
2019/2020
2018/2019
2017/2018
2016/2017

Complaints

The Ministry of Defence Low Flying Complaints and Enquiries Unit (LFCEU) received 619 complaints in FY 2019/2020, a decrease of 13.2 per cent, 2 complaints related to the three TTA. This total includes only those complaints recorded centrally by the LFCEU.

	Complaints	Flying Hours per complaint
2016-2017	1 291	23
2017-2018	1 307	22
2018-2019	713	48
2019-2020	619	56

The number of complaints and the flying hours per complaint for each LFA can be found in the accompanying Excel Tables.

Low flying compensation payments

The total compensation amount paid by the MOD relating to military low flying in FY 2019/2020 is recorded in the table below.

	Amount (£)(rounded)
2016-2017	473K
2017-2018	440K
2018-2019	226K
2019-2020	289K

This includes damages and other costs, such as claimants' legal costs. It does not include MOD legal costs. Expenditure may include interim payments for active claims as well as final payments for settled claims.

Glossary

AGL	Above Ground Level
AMSL	Above Mean Sea Level. To illustrate the difference between AGL and AMSL, if an aircraft is flying 2 000 feet above a mountain that is 5 000 feet high, it would be flying at 2 000 feet AGL and 7 000 feet AMSL.
AR	Allocated Region. An area in the Night UK Low Flying System used mainly by fast jets and transport aircraft.
Air Traffic Zones	Where aircraft are/can be provided with an Air Traffic Control Service.
CADS	Centralised Aviation Data Service. Bookings into the UK Low Flying System are made on this system which is the source for low flying statistics.
Danger Areas	A danger area is an airspace of defined dimensions within which activities dangerous to the flight of aircraft may exist at specified times such as the Salisbury Plain Training Area where live firing can take place.
Daytime hours	See night time hours
FOI	Freedom of Information
FY	Financial Year. The Ministry of Defence FY runs from 1 April to 31 March.
LF	Low Flying
LFA	Low Flying Area – maps showing the day and night time areas are at Annex A and B.
LFCEU	Low Flying Complaints and Enquiries Unit. This Unit is based at RAF Wittering and deals with low flying complaints from members of the public.
MAMC	Military Airspace Management Cell, the role of which is the day to day management of the UKLFS. MAMC administers low flying bookings and extracts statistical data from CADS.
MATZ	Military Air Traffic Zone where aircraft are/can be provided with an Air Traffic Control Service.
MSD	Minimum Separation Distance i.e. the distance that must be maintained between any part of an aircraft in flight and the ground, water or any object. It does not apply to the separation between aircraft in the same formation.
NRR	Night Rotary Region. An area in the Night UK Low Flying System used mainly by helicopters.
Night time hours	Night low flying commences within the night low flying system from sunset plus 30 minutes at N5400 E or W00000 on the 15th of each month. Night flying ends at sunrise minus 30 minutes at the same position and date.

OLF	Operational Low Flying i.e. where aircraft can fly between 250 feet and 100 feet MSD. This takes place in the three TTA when these are activated.
Restricted Areas	These include, National prohibited and restricted areas, military prohibited and restricted areas and Provost Marshal prohibited and restricted areas e.g. nuclear power stations.
TTA	Tactical Training Area. OLF can only take place in these areas which are activated when required. TTA activation times can be found on the Gov.uk website: https://www.gov.uk/government/publications/operational-low-flying-training-timetable
TVAA	Thames Valley Avoidance Area covers an area that encompasses London Gatwick, London Heathrow, London Luton, London Stansted, London city and Southend airports. Fixed Wing military aircraft require permission from Low Flying Operations Flight to enter the TVAA. Rotary Wing and light aircraft may enter the TVAA not below 500ft AGL
UKLFS	UK Low Flying System. The UKLFS covers the open airspace of the whole of the UK and surrounding overseas areas from the surface to 2000 feet above ground or mean sea level.

Further Information

Rounding

Where rounding has been used, totals and sub-totals have been rounded separately and so may not equal the sums of their rounded parts.

Revisions

Corrections to the published statistics will be made if errors are found, or if figures change as a result of improvements to methodology or changes to definitions. When making corrections, we will follow the Ministry of Defence Statistics Revisions and Corrections Policy. All corrected figures will be identified by the symbol “r”, and an explanation will be given of the reason for and size of the revision. Corrections which would have a significant impact on the utility of the statistics will be corrected as soon as possible, by reissuing the publication. Minor errors will also be corrected, but for convenience these corrections may be timed to coincide with the next annual release of the publication.

Contact Us

If you have questions about the statistics contained in this document you can contact us as follows

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Statistical point of Contact

Defence Statistics welcome feedback on our statistical products. If you have any comments or questions about this publication or about our statistics in general, you can contact us as follows:

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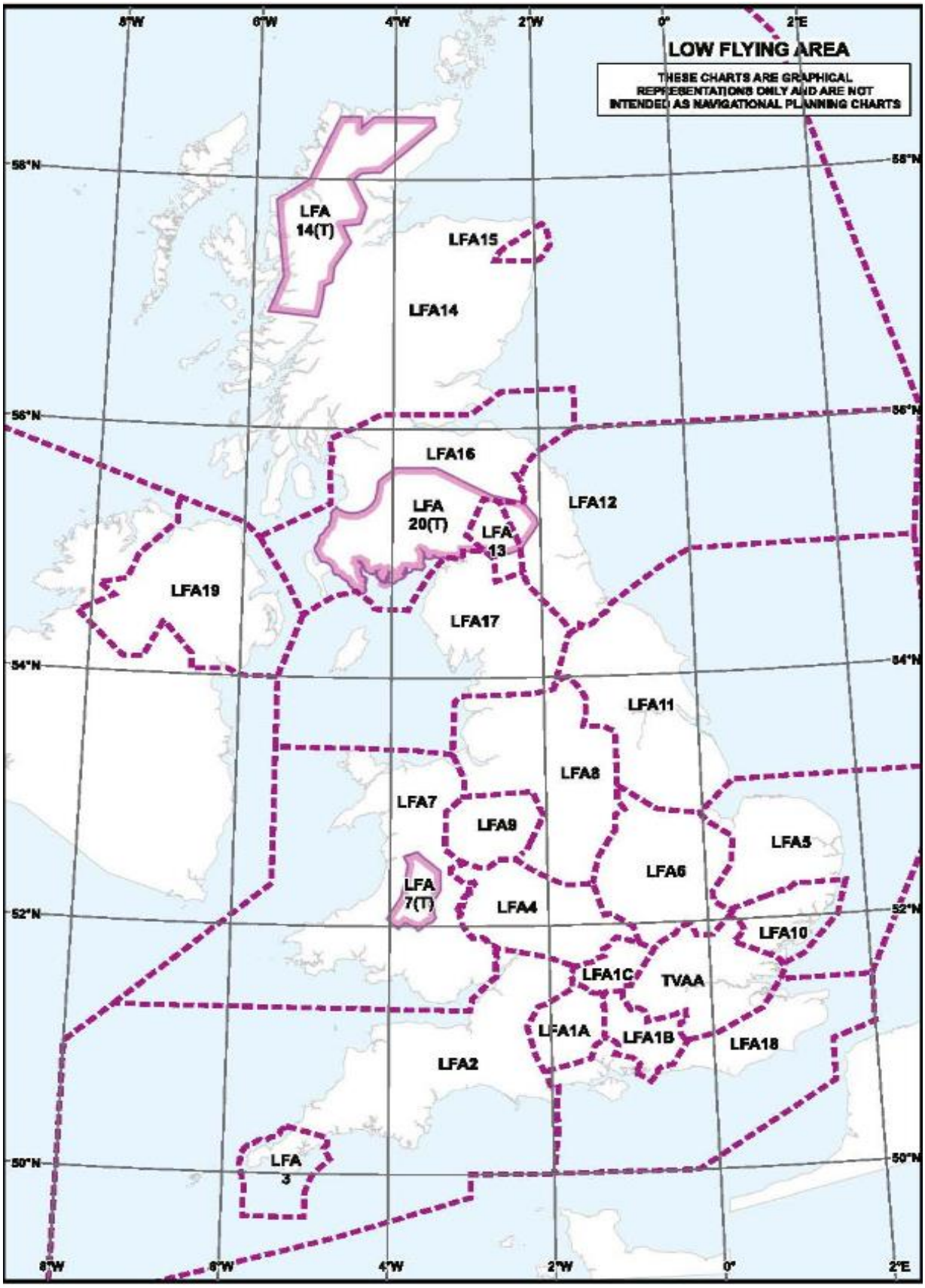
If you require information which is not available within this or other available publications, you may wish to submit a Request for Information under the Freedom of Information Act 2000 to the Ministry of Defence. For more information, see:

https://www.gov.uk/make-a-freedom-of-information-request/the-freedom-of-information-act

For general MOD enquiries, please call: 020 7218 9000

Annex A

Day Low Flying Areas



Annex B
Night Low Flying Areas