



# BRIZE NORTON NEIGHBOURHOOD PLAN

**APPENDIX 06**

**DOCUMENT H**

*Version 5 - November 2022*

## CHARACTER ASSESSMENT

*“our village  
our community  
our future”*

# DOCUMENT H

## **Document H**

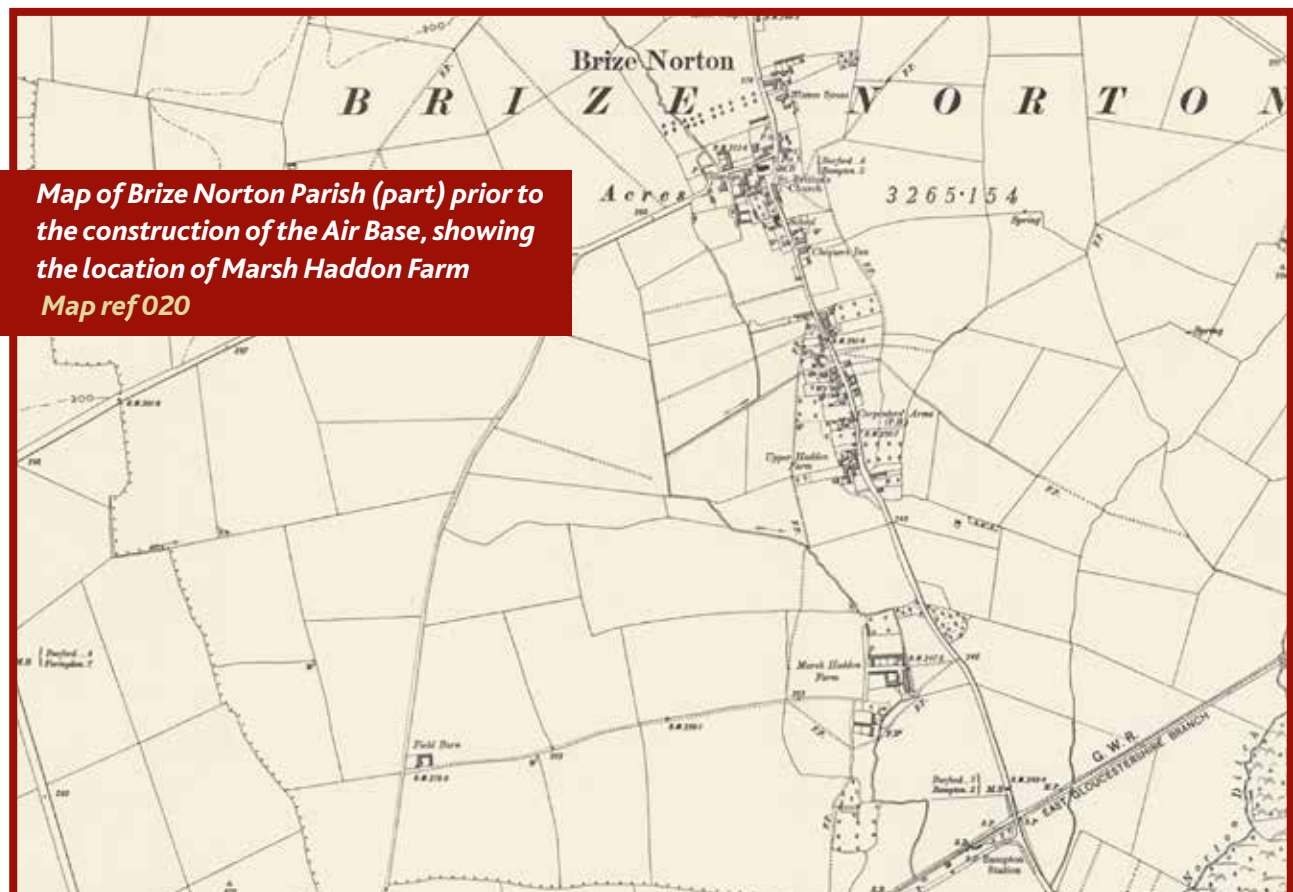
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# DOCUMENT H Section 1

## A HISTORY OF RAF BRIZE NORTON AND ITS ENVIRONMENTAL IMPACT ON THE VILLAGE

The history of RAF Brize Norton and the various environmental impacts the Airbase has had on the Village over the years, are detailed in the following sub sections:

- 1 The construction of the Air Base in 1935
- 2 The effect the Air Base had on the safety of the Village during WWII
- 3 Arrival of the USAF to Brize Norton Airbase
- 4 Brize Norton Air Base is Handed Back to the RAF.
- 5 New Hangar for the Maintenance of the Atlas Fleet of Airbus A400M Aircraft
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## 1 The Construction of the Airbase in 1935 [1]



Marsh Haddon Farm House has been on record since 1567 and had been owned by James Hoskins since 1928.



To the east of the farm house, were a pair of cottages

Much of the farmland was compulsory purchased by the MOD who commence the construction of the airfield in 1935. The house and cottages were eventually purchased and demolished before December 1943.

Royal Air Force Brize Norton came into being as a result of the RAF expansion programme of the early nineteen-thirties. The original site chosen for the aerodrome was some two or three miles further south, near the village of Clanfield, but it was soon discovered that this area was liable to flooding in the winter months, so the final choice fell on an area of farmland bounded by the villages of Brize Norton, Carterton and Black Bourton. In fact, Carterton was to have been the name of the airfield, but this was changed to avoid any possible confusion with Cardington in Bedfordshire.

Work began in 1935 along well-established lines, with an almost circular grass landing area approximately 1,000 yards across, with a domestic and technical site in the northwest corner, which included five 'B' type hangars. Four further hangar areas were also provided, dispersed at various points around the perimeter and each consisting of two hangars. (see Fig 4)



*Fig 4: Aerial View of Brize Norton RAF Air Base in 1937*



*Fig 5: Old Black & White Photo of Aircraft at Brize Norton in 1937*

The station was allocated to No 23(T) Group and was officially opened on 13th August 1937. On 7th September 1937, the first flying unit arrived, when No 2 Flying Training School (FTS) arrived from Digby, Lincs, bringing with it a collection of Hart Trainers, Audax and Fury aircraft. (see Fig 5). In fact, much of the building work was still unfinished at this time, with personnel being housed in temporary wooden huts.

In 1938 an aircraft maintenance unit was added, and from 1942 army personnel were trained to fly Horsa heavy gliders.



*Fig 6: Horsa Glider at Brize Norton*



*Fig 7: Horsa Glider being towed by an Armstrong Whitworth Albemarle*



In 1943 two concrete runways were created, one north-east to south-west, the other east to west between the Brize Norton to Bampton and Carterton to Black Bourton roads. (see Fig 8)

Other types of buildings were also constructed including a neo-Georgian station headquarters and officers' mess, all to standard expansion-scheme designs



*Fig 8: Aerial View of Brize Norton RAF Air Base in 1943*

On D-Day in 1944 the base contributed Horsa Gliders and parachutists to operations in Normandy. At the end of WWII, any Horsa's left at the base were scrapped and some ended up in the village as garden sheds and others were burnt on a bonfire on Guy Fawkes night.

### **The Railway**

One of the advantages of choosing Brize Norton Parish for the air base was that the East Gloucestershire Railway had a branch line train service that ran from Oxford through to Fairford with a railway station located in the Parish of Brize Norton, with the station name of Bampton. However, in 1945, the station name changed to Brize Norton and Bampton. [3]

In the photo Fig 9, is Bampton railway station and to the right, the wide-open farmlands of the Marsh Haddon Estate before the air base commenced construction in 1935.



*Fig 9: Bampton railway station before RAF air base was built*



*Fig 10: Renamed Brize Norton and Bampton railway station in 1961 with the aircraft hangar and the air base perimeter fence to the right of the photo*



## **(2) The effect the Air Base had on the safety of the Village during WWII [1]**

Early in August 1940, a photographic reconnaissance flight over Brize Norton air base was made by the Luftwaffe as a prelude to what was to be a disastrous air raid which had a profound effect on operations. The raid took place on Friday 16th August 1940, when at around teatime, two Junkers JU 88s appeared over the airfield.

The aircraft made a low-level attack and headed straight for the main hangar complex, dropping a total of 32 bombs, including two 250 kilo bombs, one of which skidded off a hard- standing and came to rest perilously near an ammunition store, fortunately failing to explode. However, one hangar, packed full of Oxfords aircraft, received a direct hit, destroying all the aircraft inside. In all, 46 aircraft were destroyed, comprising 35 Oxfords and 11 Hurricanes. In addition, a further 7 Oxfords were damaged, both JU 88s escaped unchallenged.

One result of this raid was that within a couple of days No.2 Flight Training School had dispersed their aircraft to relief landing grounds north-west of the airbase at Southrop and Akeman Street, and although Brize Norton was to be bombed on three more occasions, no further aircraft were lost as a result.

These bombing air raids by the Luftwaffe must have been of some great concern to the safety of the villagers and their properties in Brize Norton that were living close to the air base.

## **(3) Arrival of the USAF to Brize Norton air base [1]**

In 1948, with tension between the East and West on the increase, the British Government invited America to re-deploy air force units to England. Preparation for just such an eventuality had been under way because an informal agreement was reached in 1946 between General Spaatz, Commander US Strategic Air Forces in Europe and Marshal of the Royal Air Force Lord Tedder whereby five East Anglian bases would be prepared to handle B-29s if required.

In November 1948 a lengthy search for suitable sites in both England and Scotland finally resulted in the choice of the closely grouped airfields at Fairford, Greenham Common, Upper Heyford and Brize Norton, and an arrangement for developing these airfields for USAF use was signed in April 1950 by the then US Ambassador, Lewis Douglas, and the Under-Secretary of State for Air, Aidan Crawley, the so- called "Ambassadors Agreement."

An advance party of American Army engineers surveyed all four bases during April and May 1950 in order to determine what resources would be needed to provide each airfield with a 9,000-foot runway, (Fig 11) additional hardstands and lighting. On 7th June 1950, the 7503rd Base Complement Squadron was moved from Marham, in Norfolk, to Brize Norton.

*Fig 11: Aerial photo of Brize Norton air base in 1957 - showing the new concrete runway*





Just over a year later, the airfield work was completed and in June 1952, the USAF commenced its first operational use of Brize Norton in spectacular fashion. On a rare foggy day, the drone of many heavy piston-engine aircraft circling the area could be heard, and finally, one by one, in came a total of 21, '11th Bomb Wing' Convair B-36s the ten-engine bomber known as the Peacemaker (Fig.12), or more unofficially, the "aluminium overcast". The aircraft stayed for about a week, with little or no flying being done before departing one evening at 2-minute intervals back to the States.



*Fig 12: USAF Convair B-36 Bomber – known as the 'Peacemaker' (photo courtesy USAF)*

In 1953 saw the arrival of the first unit of Boeing B-47 Stratojets, with the first element of the 305th Bomb Wing touching down on the 4th September for the then customary three months tour of duty. These were the forerunners of several hundred of their type, which would ultimately visit Brize Norton air base during the next 11 years. (Fig 13)



*Fig 13: USAF Boeing B-47 Stratojet (photo courtesy USAF)*

On the 26th May 1958, Brize Norton Airbase witnessed its first "Ban-the-Bomb" March, when 250 protesters made a peaceful protest, which included handing in a petition at the main gate to a selected airman. It had been decided that all officers would remain in the background to avoid provoking anti-American elements in the crowd.

However, the most significant event of 1958 was the ending of the old-style full B-47 wing deployments with the return to the States of the 100th Bomb Wing on April 1st. Thereafter, the B-47 units were only to stay in this country for about three weeks at a time in considerably reduced numbers under the so-called "Reflex Alert" system. The numbers present at any one time were reduced from the 40 to 50 of the old system, to approximately 20, and little, if any, flying was undertaken between arrival and departure.

The plan for the run-down of the base was published on the 1st September 1964 and called for the last USAF personnel to be off the base on the 31st May 1965. However, the Reflex operations continued right up until the official hand-over of the base on 1st April 1965.

#### **(4) Brize Norton Air Base is Handed Back to the RAF [1]**

For some years prior to 1965, the RAF's principal strategic transport base had been located at RAF Lyneham in Wiltshire, who were operating the Hastings early on and later, the Comet and Britannia aircraft. With the ordering of several new types to replace these, it became evident that RAF Lyneham could no longer handle all the main transport requirements on its own. The airfield was not large enough to handle VC10s and Belfast's, especially with regard to runway length as it would not accommodate a fully laden VC10 with a sufficient safety margin. Also, with the C-130K Hercules on order as the new tactical transport aircraft, which were to be based at RAF Lyneham, it was decided that the base would not be ideal for the VC10's and Belfast's.

The search was therefore started for a new strategic base and the choice soon fell on Brize Norton. Plans for its re-development were already well in hand at the time of the American USAF withdrawal when work was started almost immediately.

Although already a large and well-equipped airfield, the air base obviously lacked the facilities necessary to handle large transport aircraft and their cargoes, both human and material. Therefore, amongst the priorities in the building programme was a passenger terminal, a cargo handling shed (converted from an existing 'B' type hangar) and enlarged aprons with full floodlighting. On the domestic side, the Americans had built comparatively few married quarters, so a large-scale housing programme was put in hand together with a hotel for transit personnel and new live-in accommodation.

However, perhaps the most impressive item in the building programme was what came to be known as Base Hangar. Designed to accommodate up to six aircraft of VC10/Belfast size, at the time of its completion in August 1967, it was the largest cantilever structure in Western Europe and cost just under two million pounds. The two squadrons finally moved into RAF Brize Norton during May 1967 and continued to build-up to their full strengths of 14 VC10s and 10 Belfast's.

In early 1970, the build-up of the RAF's Hercules fleet was complete and consequently, there was little room left at RAF Lyneham for the two Britannia C1/C2 Squadrons, Nos. 99 and 511, which accordingly moved into Brize Norton during June to take up residence on the old B-47 Reflex pans on the south side of the airfield.

In 1970 four squadrons operated from Brize Norton, their aircraft including a fleet of VC10 jet airliners. During the 1970s, as overseas bases were closed and operations contracted, aircraft numbers were reduced.

During most of 1976 and part of 1977, the air base handled the 'Master Diversion' and 'Foreign Visiting Aircraft Commitment' for the area whilst the runways at RAF Lyneham were receiving attention. This naturally resulted in a large increase in the amount of visiting aircraft and during this time, more than 30 different air forces were represented, with a large proportion of these using the ubiquitous C-130.

One of the most interesting and continuing aspects of the station's work at that time was the provision of VC10s for VIP flights, with various members of the Royal Family, Prime Ministers and Cabinet Ministers, being carried to all parts of the globe on many occasions. In 1987 the president of the USSR, Mikhail Gorbachev, visited RAF Brize Norton for talks with the Prime Minister of the United Kingdom, Margaret Thatcher. Another visitor which had also become part of RAF Brize Norton's way of life was Concorde, with British Airways using the base every three or four months for two-week crew training periods.



*Fig 14: Concorde Landing at RAF Brize Norton (photo courtesy MOD)*

From 1983, RAF Brize Norton provided air-to-air refuelling for the RAF using VC10 tanker aircraft and later Tri-stars. The base contributed to the Falklands campaign in 1982, the first Gulf War in 1990–1, operations in Bosnia and Kosovo in the 1990s and the Second Gulf War in 2003. By 2004 RAF Brize Norton was the largest RAF base in the UK.



*Fig 15: Lockheed TriStar at RAF Brize Norton*





*Fig 16: Vickers VC-10 - refuelling 2 Tornado F3's (photo courtesy MOD)*

On 1 April 2000, the RAF base became part of No 2 Group. [2] The complement of flying squadrons was increased to four with the formation of No 99 Squadron and the arrival of Boeing C-17 Globemaster III aircraft in Summer 2001. Following the tragic incidents of 11 September 2001 in the USA, RAF Brize Norton has played a significant role in the campaign against terrorism. A total of 7 aircraft and 500 personnel were deployed to support operations in Afghanistan and 12 aircraft and 600 personnel were deployed in support of Operation Telic (Iraq). For both operations, the RAF base undertook the movement of record numbers of passengers and massive amounts of freight before, during and after the war fighting operation



*Fig 17: C-17 Globemaster III at Brize Norton in winter (photo courtesy MOD)*

The Royal Air Force conducted its final operational sortie with the Lockheed TriStar on 24 March 2014, with a pair of the jets operating from RAF Brize Norton four days after the RAF's 216 Squadron, which had operated the TriStar for 30 years, was formally deactivated.

Retirement of the TriStar tanker/transport fleet followed the departure from service of the RAF's Vickers VC10 'in-flight' refuelling aircraft in September 2013.

The responsibilities of the Tristar and VC 10's have now been taken over by the service's small number of new Airbus A330 Voyagers which are supplied via the Future Strategic Tanker Aircraft contract with the company Air-Tanker.



*Fig 18: Airbus A330 Voyager at Brize Norton air base (photo courtesy MOD)*

The heaviest aircraft ever built visited RAF Brize Norton in August 2018. The Russian Antonov 225 Mriya, which has 32 wheels and a wingspan of over 88 metres, was originally designed to transport equipment for the Soviet Space programme including the Buran Orbiter, which was carried on the aircraft's back.



*Fig 19: Russian Antonov 225 landing at RAF Brize Norton (photo courtesy RAF Brize Norton)*



## **(5) New Hangar for the Maintenance of Atlas Fleet Airbus A400M Aircraft**

On 14th May 2012 the BBC stated that: *Plans to build a large aircraft hangar at RAF Brize Norton have been announced. The building at the Oxfordshire base could house three aircraft at any one time, measuring 143m (469ft) by 147m (482ft), and 28m (92ft) high.*

*A West Oxfordshire District Council planning sub-committee is set to discuss the proposals on 21 May. Proposals are expected to be deferred until more is known of the building's environmental and visual impact. The report from the head of planning and sustainable communities' states: "It could have impacts beyond the immediate vicinity. Due to the scale of the building, its proximity to the village and a public footpath, and as a consequence of the potential to increase flood risk, officers determined that the application required an environmental assessment to be submitted.*

*The hangar would be located on the south of the airfield and be used for the maintenance and repair of A400M transport planes. It would be the second biggest on the site.*



Fig 20: Construction of the new A400M hangar (photo courtesy RAF Brize Norton)

On the 2nd February 2018, the local newspaper group for Oxfordshire (thisisoxfordshire) had an article stating that:

*An aircraft hangar larger than three football pitches has been opened at RAF Brize Norton to make it easier for servicemen to fly missions around the world. The new Defence Minister, Guto Bebb, opened the facility yesterday, calling it 'phenomenally impressive.' The hangar will be the new home for the Airbus A400M Atlas fleet, which recently took part in missions to the Caribbean after hurricane Irma last autumn. The hangar covers 24,000sq m, is 28m tall and cost approximately £70million.*

*Maintenance of the aircraft will now be carried out inside the hangar, making it easier and safer for personnel. Mr Bebb, who was made Minister for Defence Procurement three weeks ago and was on his first visit to an RAF base, said the hangar would be 'crucial' in ensuring the fleet that can work in many different scenarios.*

*He added: "It is a state-of-the-art facility, and everything you'd expect from a country that takes defence seriously. Our commitment to Brize Norton has been made very clear with this investment.*





*Fig 21: Minister for Defence Procurement, Guto Bebb, opening a new hangar for the RAF Atlas A400M transport aircraft fleet on 1st February 2018 (photo courtesy thisisoxfordshire news)*

Wing Commander Ed Horne, the Officer Commanding 70 Squadron RAF that operates the UK's Atlas aircraft said:

*"This new hangar provides us with a world-class maintenance facility to match the world-beating capability of the Atlas aircraft."*

The hangar is designed to make Atlas maintenance easier, safer and more efficient. The internal layout is the result of extensive feedback from support delivery teams and has been designed to be highly adaptable with easy access to specialist tools and equipment.



*Fig 22: Exterior of the completed A400M hangar (photo courtesy Balfour Beatty)*



*Fig 23: Aerial View of new A400M hangar (photo courtesy RAF Brize Norton)*

#### **(6) The arrival of the Atlas Airbus A400M Fleet of Aircraft**



*Fig 24: Atlas A400M Aircraft Landing at Brize Norton (photo courtesy RAF Brize Norton)*



Defence Equipment and Support Director Air Support, Adrian Baguley, said:

*The Atlas programme is delivering a world-class fleet for the RAF, offering the UK next-generation transport and airlift abilities for operations all over the world [5].*

*Expert support on the ground in the UK is an essential part of that capability and this new facility will ensure that work continues for decades to come.*

The aircraft can carry up to 37 tonnes over a range of 2,000 nautical miles. It is able to deploy troops and equipment between and within theatres of operation either by parachute or by landing on short, potentially unprepared airstrips.

Atlas can also carry armoured vehicles, drastically reducing the time it takes for a deploying force to be ready to fight. For humanitarian roles, it is capable of deploying mobile cranes, excavators and large dump trucks for disaster relief operations, for example clearing earthquake sites.

However, due to certain production issues at Airbus, of the 22 aircraft that were ordered by the RAF for delivery in 2014, only 18 so far have been delivered. The remaining 4 aircraft are due for delivery by 2022. As a result, according to the Station Commander, some of the Hercules C-130J aircraft will remain operational at Brize Norton, gradually becoming phased out by 2035 when their operational duties will be replaced by the A400M aircraft

#### **(7) The noise from the Aircraft, during engine ground runs, taxiing, take-off and landing**

In the past, the majority of residents living within the Village were accustomed to the noise from the various aircraft during taxiing, take-off and landing. However, after the Brize Norton air base took delivery of the C130 Hercules Fleet in July 2011, due to the closure of RAF Lyneham, a high number of noise complaints were registered at the Base due to the number of engine ground run testing of these aircraft throughout the night.



Fig 25: Local residents of Brize Norton protesting about the aircraft noise {4}



The BBC reported that there were 958 complaints from July 2011 until July 2012. Among these complaints, 436 related to aircraft noise, 293 to engine ground run testing and 87 to low level flying. This was up from a total of only 23 that were recorded in the previous year. [27]

As a result of these complaints, the MOD stated that they would conduct a 'noise survey' to better understand the issue.

The survey was carried out by AMEC Environmental & Infrastructure UK Ltd, [6] on behalf of the MOD's Defence Infrastructure Organisation and the full report was issued in August 2012. The conclusions within the report related to the level of aircraft noise within Brize Norton and other surrounding local villages are summarised below.

AMEC stated that community noise monitoring has been undertaken on four occasions between October 2011 and May 2012. The monitoring locations were selected by AMEC, with the assistance of RAF Brize Norton, and were undertaken in the villages of Black Bourton; Alvescot; Brize Norton and Bampton.

The four monitoring locations are described below:

- Location 1: 6 Grassonmead, Alvescot to the south-west of the base. The sound level meter was attached to a garden shed, at a height that negated façade influences and allowed an unobstructed view towards the base. The monitoring location roughly falls under Runway 26 departures / Runway 08 approach.
- Location 2: 105 Station Road, Brize Norton to the north-east of the site. The sound level meter was placed in the back garden of the property in a free-field position. The location is approximately 50m north of the runway centerline at the end of Runway 26. The location roughly falls under the Runway 26 approach / Runway 08 departures.
- Location 3: Aylesbury Mushroom Farms, Black Bourton approximately 400m south of the airfield. The sound level meter was located in the rear garden in a free-field position. Although there are closer residential dwellings to the airfield, this location was selected due to the security of the equipment and was considered to be more representative of the greater population of Black Bourton.
- Location 4: Bushy House, Bampton south of the base. The sound level meter was placed in the back garden of the property.

#### **Average Measured Community Noise Levels During C130 Bay 73 South-Facing Engine Ground Run**

Measured Average Community Noise Level, LAeq, dB				
	Bampton	Black Bourton	Brize Norton	Alvescot
Hercules C130 Engine Ground Runs (EGR's)				
Aux Power Unit	41.3	60.4	44.9	49.6
Low Speed Ground Idle	43.6	68.6	49.2	53.9
Normal Speed Ground Idle	44.9	74.2	48.8	51.9
High Power	48.5	82.2	51.5	56.2
Maximum Reverse	45.0	75.0	52.8	49.3

October 2012

Area	Day Average – dB(A) 0700-2300h	Night Average – dB(A) 2300-0700h	Max dB(A) at Night
Alvescot	55.0	48.0	82.8
Bampton	48.1	37.2	72.3
Brize Norton	58.7	52.0	87.9
Black Bourton	68.1	59.2	92.1

From these results AMEC stated the following: -

*Consideration of the overall average noise levels and noise levels during the C130 EGR against technical guidance and policy has identified that action should be taken to mitigate the noise, most notably for the community of Black Bourton.*

As a result, RAF Brize Norton [7] introduced a number of initiatives to help mitigate the levels of noise generated by the C130 Hercules Fleet; as briefly outlined below:

- A permanent Environmental Noise Working Group was established
- Aircraft engine ground runs were no longer to be routinely conducted on Aircraft Bays 70 – 82.
- Rigorous restrictions on engine ground runs (EGR's) were to continue in place to ensure that only those essential to operations were conducted at night.
- Additional resources were put in place to enable the Station to tow the Hercules aircraft to areas on the Station as far as possible away from the surrounding communities before EGR's were conducted.
- Limitations on the use of reverse thrust for the Hercules aircraft on landings were introduced.
- Training flights were only to be conducted during the weekdays only, unless they were essential for operations.

According to the BBC news in November 2012, £1.6m was spent by RAF Brize Norton to reduce the level of aircraft noise. As a result, further noise measurements were conducted by AMEC during February - March and June - July 2013, According to the Air Commodore at RAF Brize Norton.

*"The results of these measurements show of marked improvement on the level of noise experienced by the local communities".*

The table below, dated November 2013, indicates the reduction in noise levels.

Area	Day Average – dB(A) 0700-2300h	Night Average – dB(A) 2300-0700h	Max dB(A) at Night
Alvescot	55.3	48.1	79.3
Bampton	47.7	41.6	71.4
Brize Norton	55.5	49.7	80.8
Black Bourton	56.5	56.4	79.0

A further survey on aircraft noise at Brize Norton was conducted by the Occupational & Environmental Medicine Wing, Noise & Vibration Division. Their report was issued in January 2014. Their survey produced noise contours using the Federal Aviation Administrations Integrated Noise Model (INM). Their report recommended that the 72, 66 and 63 LAeq 16hr. administrative adjusted noise contours should be used as a basis for the Noise Amelioration Scheme (Military) NAS(M) at Brize Norton. The aim of the NAS(M) is to compensate those people living in the immediate vicinity of military airfields in the UK who are affected by the noise from this activity.

## **(8) Future Impact of Noise from the new Atlas A400M Fleet of Aircraft.**

At the Local Consultation Working Group Meeting (LCWG) held on the 29th July 2013, [18] it was stated that:

*The Project Team for bringing the A400M Aircraft into service is seeking data on the noise characteristics of the A400M in order to conduct a study into the environmental impact of the aircraft's introduction into service and noting the concerns of local residents that the aircraft is bigger and more powerful and hence residents worry that it will be noisier than the C130 aircraft. Airbus Military representatives have stated that the noise data measurements collected when it visited the Station on Sept 12 and which have been the only noise readings available to date were not a true representation, because the aircraft was deliberately configured to make as much noise as possible in order to identify the peak noise value. Airbus Military have stated that this is uncharacteristic of the noise it would actually generate in normal operation even when undergoing an EGR.*

However, at the LCWG Meeting held on 17th May 2017, [14] it was stated that:

*It has been decided by the Unit that it would make sense to delay the repeat of the AMEC Study, which generates a noise contour reading until all of the expected A400M aircraft have arrived at RAF Brize Norton.*

A stage 2 Engine Ground Running Noise Comparative Study by AMEC Environmental & Infrastructure UK Ltd, on behalf of the MOD's Defence Infrastructure Organisation was then carried out. The AMEC Stage 2 study was eventually issued in late 2018. Within the Executive Summary it stated that:

*Following Stage 1 a Comparative Assessment of Aircraft Noise Emissions Report was produced with the purpose of summarizing and comparing the available noise data for the A400M. The report was mainly concerned with Engine Ground Running (EGR) noise, as this is the source of the majority of noise complaints received by RAF Brize Norton. The comparative study indicated that the A400M was quieter in flight when compared with the C17, C130 and VC10. However, under high power runs the A400M had higher noise emissions. It was however noted that the number of hours of EGR's required for the A400M was estimated to be lower than for the C130 and C17. It was also noted that the directivity of the A400M was opposite to that of the C130. It was considered that these points should be considered in the airport noise management plan.*

The Stage 2 report was produced to look into more detail at the received noise levels at the receptor locations during EGR's to identify whether any changes were needed to the current noise management procedures for engine ground running with the introduction of the A400M aircraft.

The report Section itself was delayed awaiting the arrival of all of the expected A400M aircraft, so that a full comparative study of engine ground running noise assessments could be carried using the Federal Aviation Administrations Integrated Noise Model (INM).

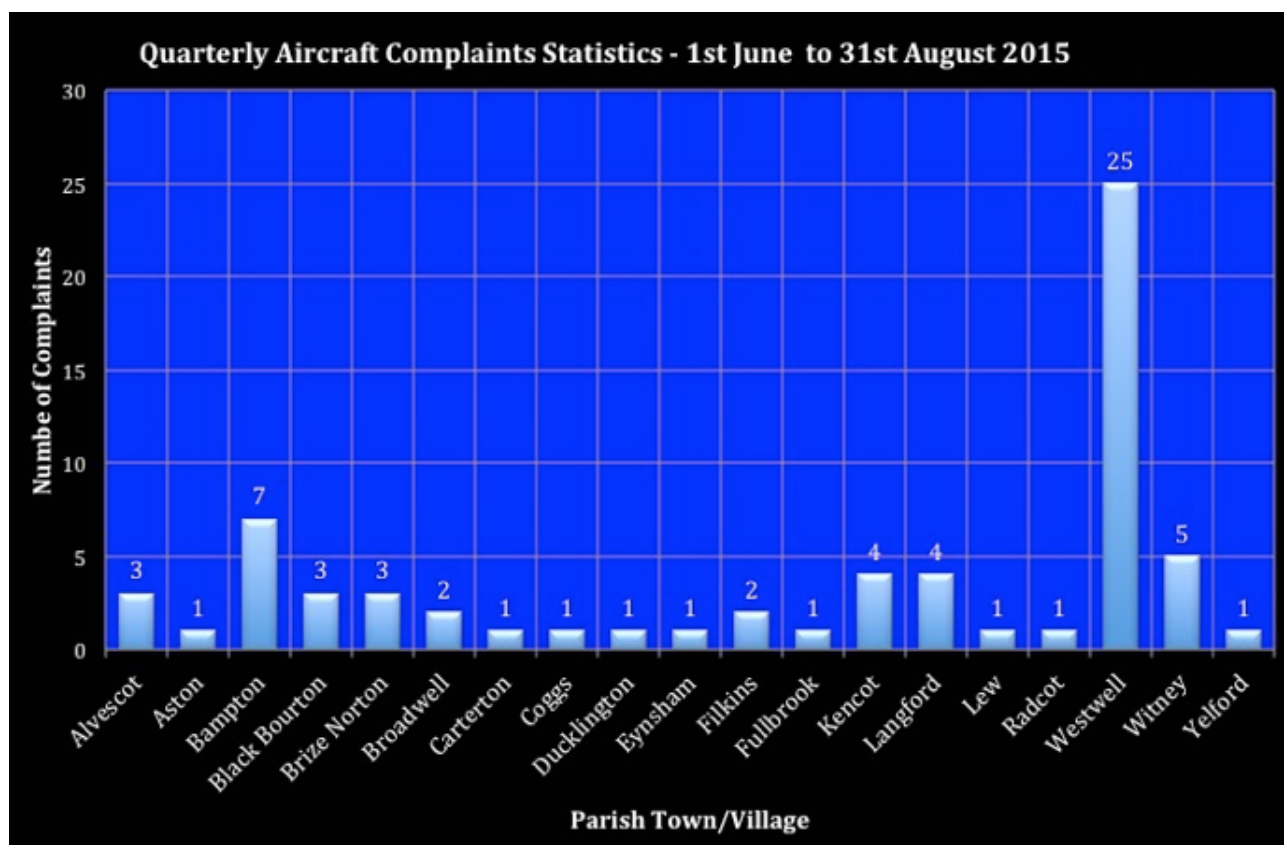
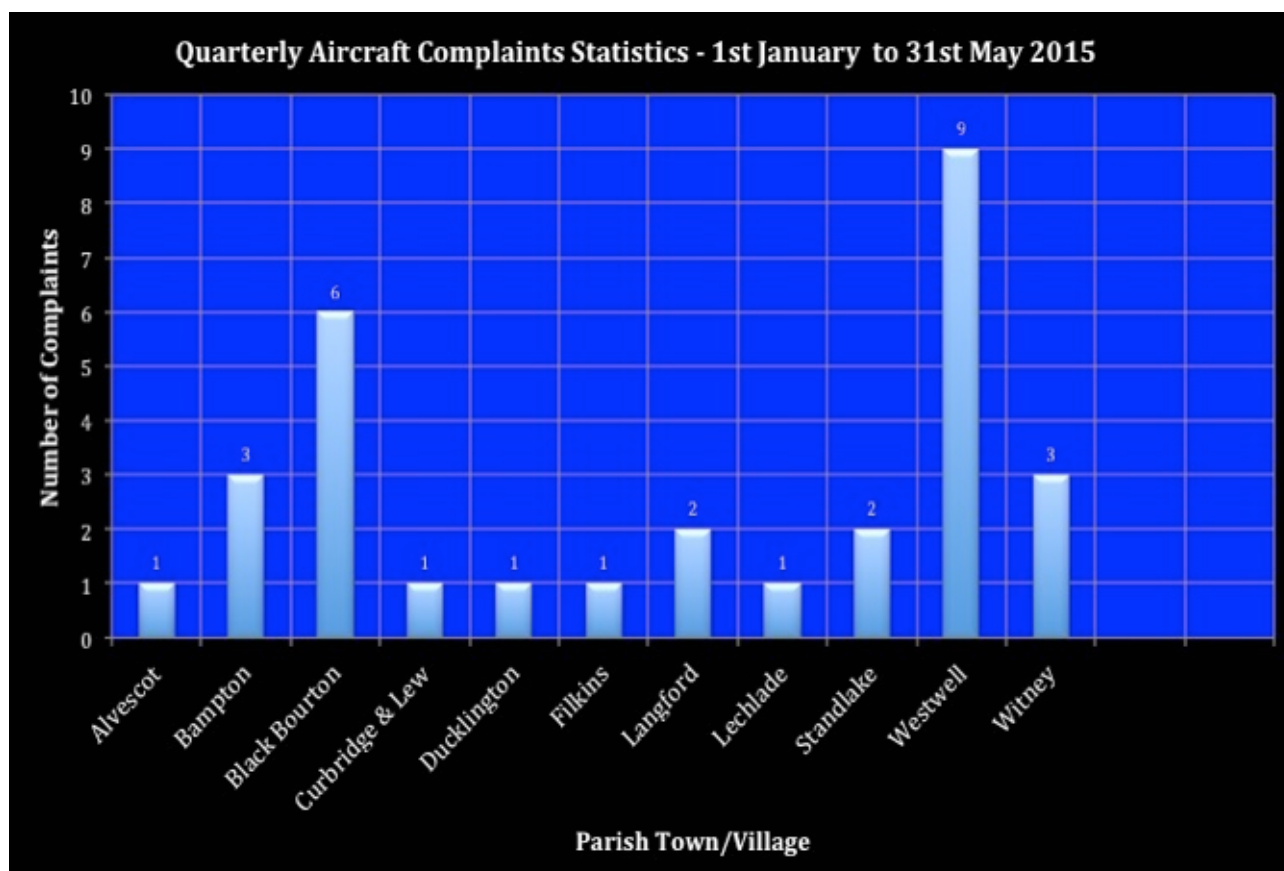
The tests highlighted the issue regarding the location of the Bays that are selected for carrying out the engine ground run (EGR) and also the direction and strength of the prevailing wind at the time of the EGR.

They recommended that if an A400M EGR were to be undertaken on Bays 61 to 68 then the furthest Bay 68 would be preferable to reduce the noise disturbance to the village of Brize Norton. Furthermore, they recommended, that with a dominant wind direction alternative Bays other than Bays 61 to 68 should be considered when undertaking high power EGR's.

They suggested that locations on taxiway Golf and the Angel Bays would be preferable as they result in a relatively equitable distribution of noise between Brize Norton and Black Bourton during a westerly wind direction. Also, from the results of their comparative tests, they concluded that the overall noise levels of EGR's would increase as a result to changes in the fleet and notably the introduction of the A400M aircraft. They stated that: *"It is therefore expected that the EGR noise output from the Station would also increase".*

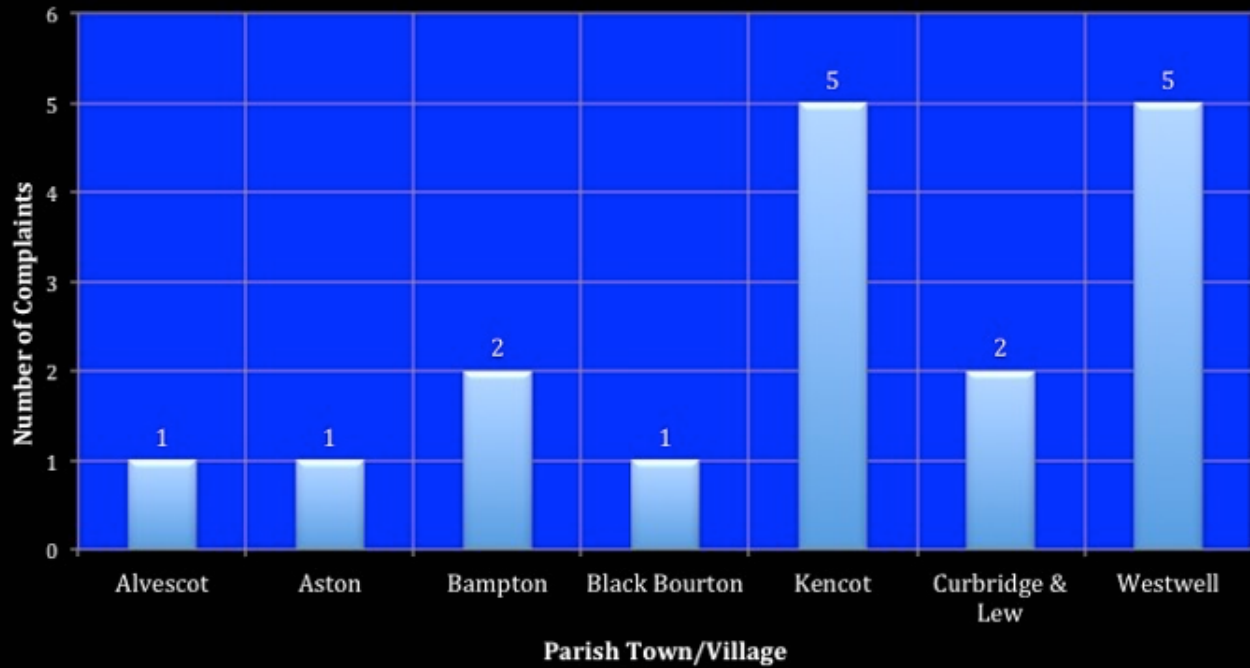
## (9) Aircraft Noise Complaints - Statistical Analysis Charts

On the following pages, are the graphs that show how the aircraft noise complaints have varied in number over the periods between 2010/2011, when the Hercules Aircraft (C-130J) were transferred to RAF Brize Norton and the periods between 2015/2016 when the new Atlas Aircraft (A400M) were introduced at RAF Brize Norton.

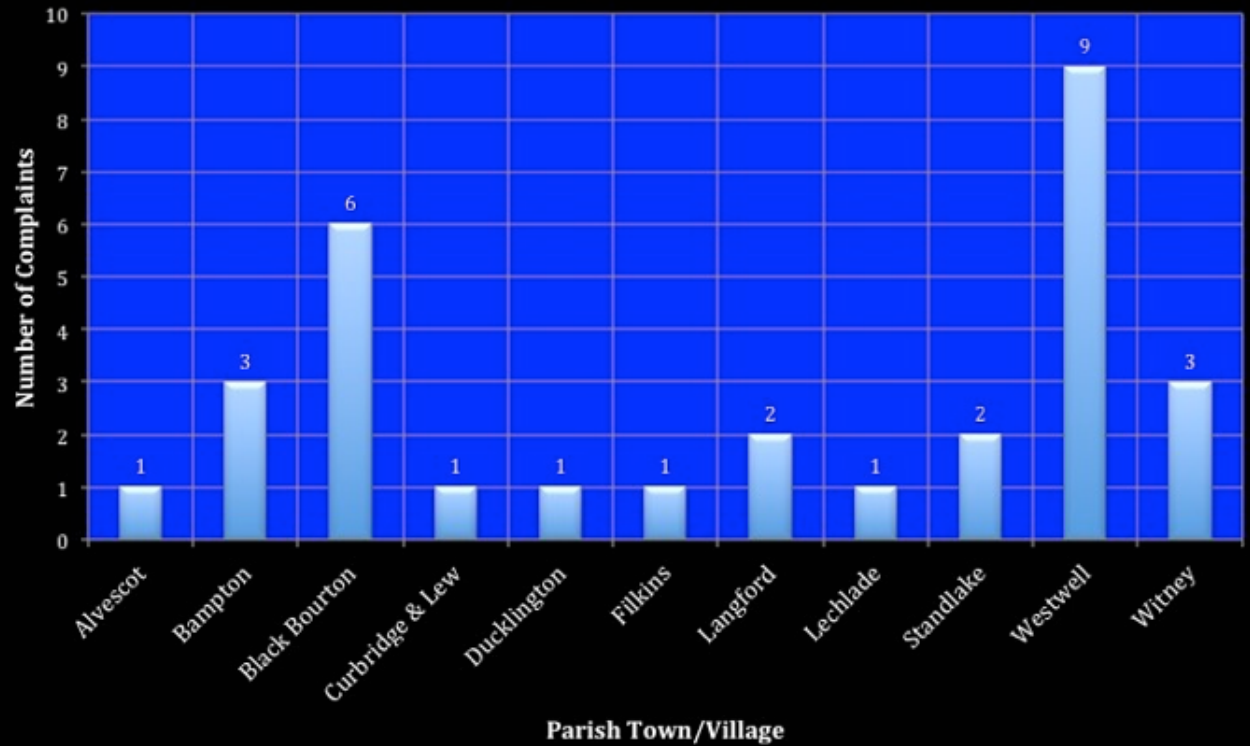




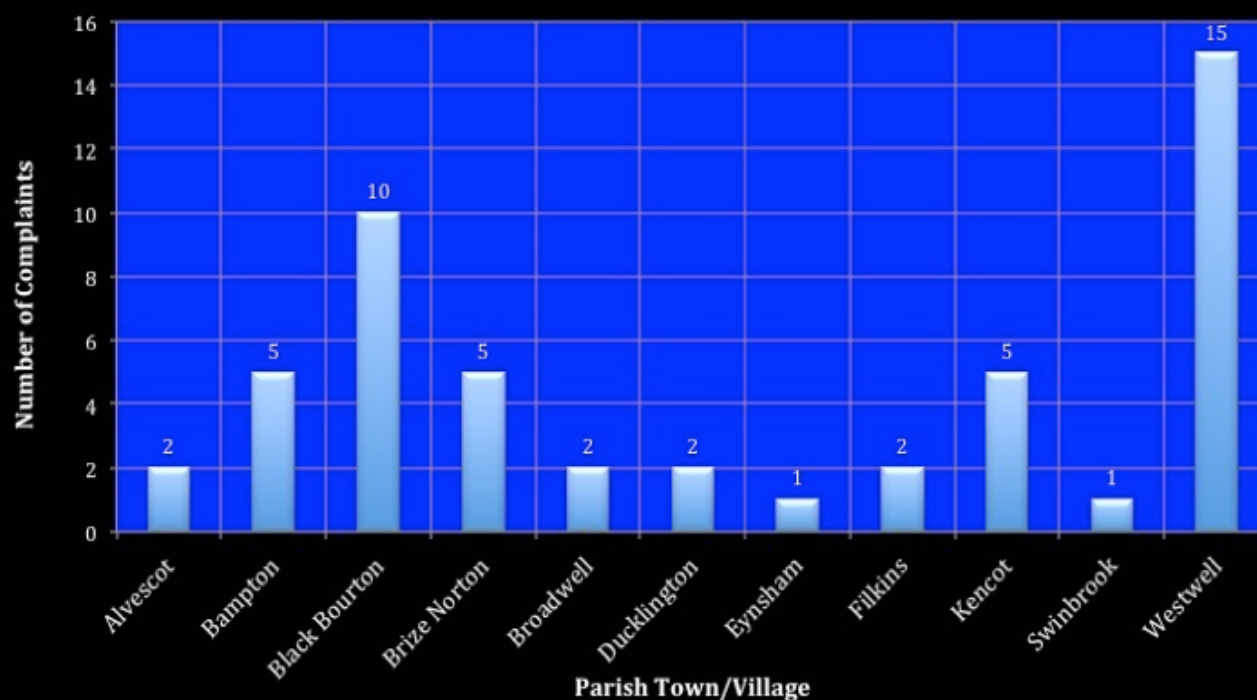
**Quarterly Aircraft Complaints Statistics - 1st Sept to 30th Nov 2015**



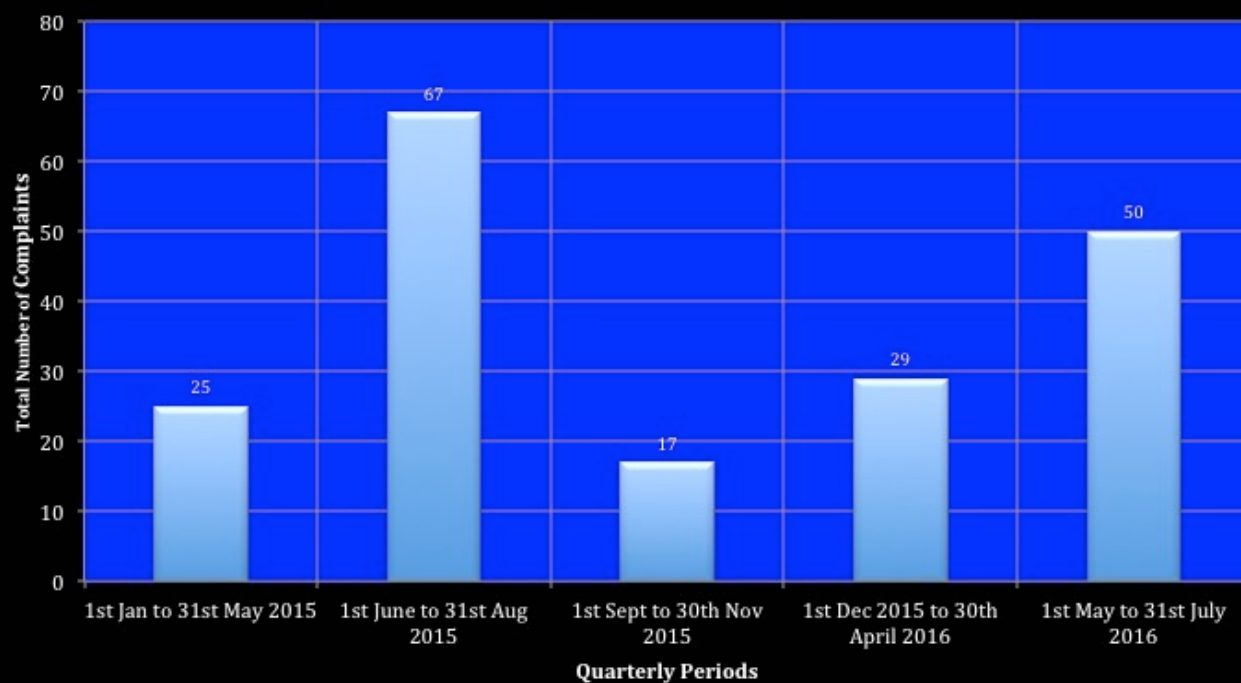
**Quarterly Aircraft Complaints Statistics - 1st Dec 2015 to 30th April 2016**

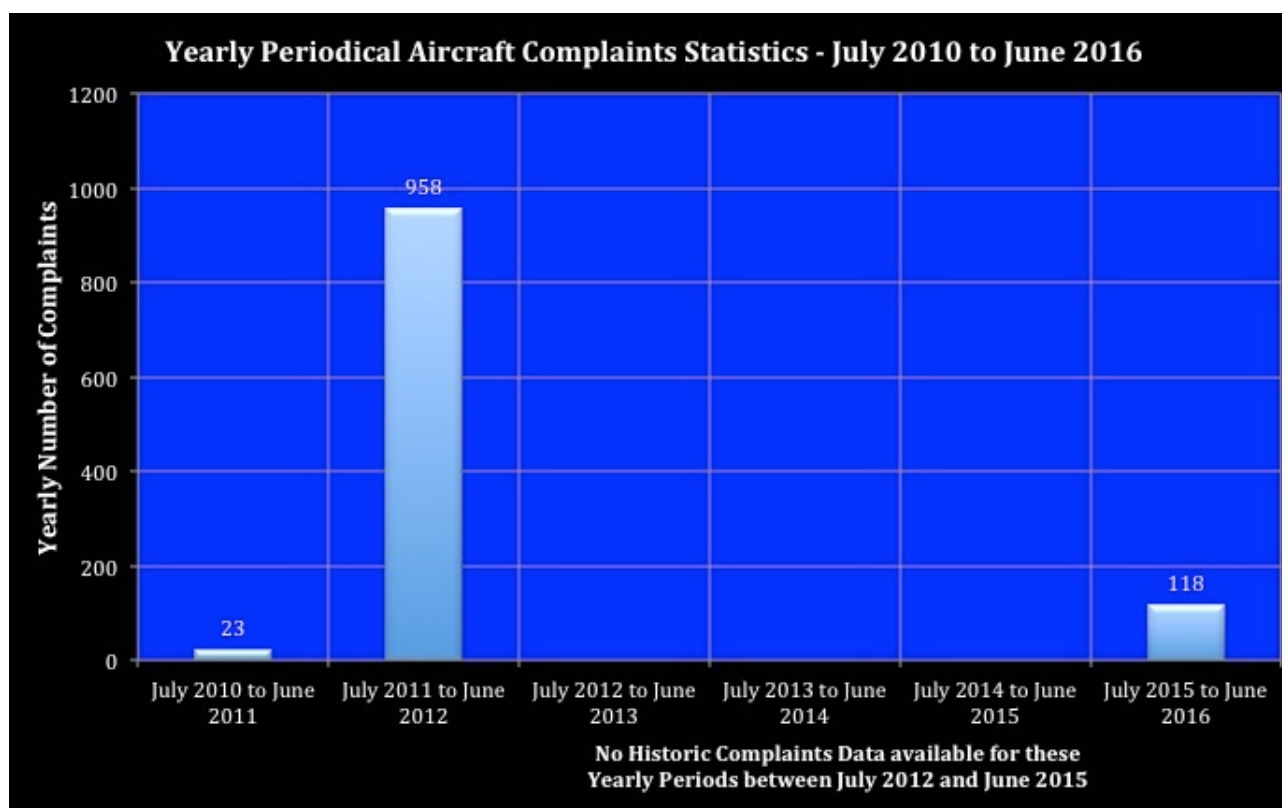


**Quarterly Aircraft Complaints Statistics - 1st May to 31st July 2016**



**Totalised Quarterly Complaints Statistics - 1st Jan 2015 to 31st July 2016**





### Analysis of the Aircraft Noise Complaints:

From analysing the data detailed in the previous charts relating to aircraft noise complaints, the following points are of significance.

- From the period 2010/2011 to the period 2011/2012 there was over a 2000% increase in the complaints (23 up to 958) which was almost entirely related to the 33 Hercules Aircraft being transferred from RAF Lyneham to RAF Brize Norton in July 2011. The majority of the complaints (293) in this period were due to overnight engine ground run (EGR) testing.
- From the period 2011/2012 to 2015/2016 the number of complaints dropped by 88% (958 down to 118).
- However, the number of complaints in the period 2015/2016 is still 400% higher than the 2010/2011 period. The majority of complaints have been due to over-flight of aircraft around the surrounding villages, in particular Westwell Village, located in a westerly direction from the RAF Base.

### Local/Night Flying and EGR Noise Abatement Procedures

In March 2021, the MOD formally issued their Section detailing the procedures for day and night flying and Engine Ground Running for Normal (0700 – 1900), Outside (1900 – 2300) and Quiet (2300 – 0700) Working Hours. [28]

## **(10) The Environmental Pollution from the Aircraft exhausts gases.**

Department for Environment Food & Rural Affairs (DEFRA) [8]

They state that air pollution poses the biggest environmental threat to public health. Short-term exposure to elevated levels of air pollution can cause a range of effects including exacerbation of asthma, effects on lung function, increases in hospital admissions and mortality. Epidemiological studies have shown that long-term exposure reduces life expectancy, mainly due to increased risk of mortality from cardiovascular and respiratory causes and from lung cancer. It is a particular threat to vulnerable groups, including the elderly, to the very young, and to those with existing health issues, like respiratory problems.

The United States Environmental Protection Agency (EPA) [9] have carried out extensive tests on aircraft exhaust gases that produce the following airborne pollutants that are as listed below, along with their possible harmful effects on health

Volatile Organic Compounds (VOC), which causes eye and respiratory tract irritation,

Oxides of Nitrogen (NOX), which causes lung irritation

Ozone (O<sub>3</sub>) which causes lung structure damage.

Carbon Monoxide (CO), which causes cardiovascular effects.

Particulate Matter (PM<sub>10</sub> & PM<sub>2.5</sub>), which causes premature mortality and cardiovascular disease.

### **Aircraft emissions affect air quality on scales from local to global.**

On the local scale, emissions of reactive and toxic gases and particles can affect the health of flight line workers and people living near airports. Primary and secondary particle emissions can degrade visibility, and reactive organic gases and nitrogen oxides can contribute to urban and regional ozone and other photochemical pollutants.

In the United States 'Journal of the Air & Waste Management Association' there was a report released on 24th January 2012 titled:

Probing Emissions of Military Cargo Aircraft: Description of a Joint Field Measurement Strategic Environmental Research and Development Program [9]

It stated:

*The purpose of the report was to develop effective air quality control strategies for military air bases; there is a need to accurately quantify these emissions.*

*In support of the Strategic Environmental Research and Development Program project, the particulate matter (PM) and gaseous emissions from two T56 engines on a parked C-130 aircraft were characterized at the Kentucky Air National Guard base in Louisville.*

The report went on to state that:

*Environmental epidemiological data published in the past two decades clearly link the adverse health effects to increased levels of particulate air pollution and coexistence of gaseous pollutants. Potential human exposures to elevated poly-aromatic hydrocarbon concentrations during various flight-related and ground-support activities of C-130H aircraft were shown. Lately, evidence of adverse health effects by ultra fine particles (diameter  $\leq 0.1 \mu\text{m}$ ) are also mounting. All of these evidences suggest the inadequacy of current mitigation of particulate emissions; mobile sources and aircraft emissions. These are major contributors to particulate emissions. Lack of military aircraft emissions data is a significant issue in air quality regulation around military bases and airfields.*



In the report they detailed the results of the following measurement tests that were carried out:

- Exhaust particles at the Engine Exhaust Plane (EEP)
- Combustion gases at the Engine Exhaust Plane (EEP)
- Exhaust particles at 15m from the EEP
- Combustion gases, NOX and CO2 at 15m from the EEP

The measurements were taken at the following five separate engine settings with increasing thrust levels during the engine ground runs on the C-130H.

- Low speed ground idle
- High speed ground idle
- Flight idle
- Cruise
- Maximum Power

From the results of these measurements the following observations were made:

- The size and number of the Particle Matter (PM) increased at each increment in the level of the engine setting at both the EEP and the 15m location.
- Also, the NOX and CO2 concentration ratios increased at each increment in the level of the engine setting at both the EEP and the 15m location. However, an increase in engine power produced relatively higher NOX concentration ratios than the CO2 concentration ratios due to the higher combustion temperature.

The report did not produce any recommendations for the health and safety of the ground crew technicians that are operating in the vicinity of the aircraft during the engine ground runs, even though the exhaust particles and the corresponding combustion gases at maximum power did appear to be at a relatively high level.



***Hercules - C-130 aircraft***

At RAF Brize Norton, the Hercules fleet of C-130 aircraft will be gradually phased out by 2035 when the Atlas fleet of A400M Airbus aircraft will take over the duties of the Hercules fleet. These aircraft, with their modern and efficient TP400-D6 turboprop engines, are expected to produce lower levels of pollution particles and combustion gas.

Average organic emission factors for selected chemicals from C-130 aircraft engines is shown in table 1

Average organic emission factors for selected chemicals from C-130 aircraft engines. (Results for additional chemicals are provided in Supplemental data).

Species	Units	Engine power				
		Lo speed ground idle	Hi speed ground idle	Flight idle	Cruise	Max power
Acetaldehyde	mg kg <sup>-1</sup> fuel	436	17.8	11.0	1.99	1.64
Acetone	mg kg <sup>-1</sup> fuel	196	45.9	81.9	9.88	36.3
Acetylene	mg kg <sup>-1</sup> fuel	155	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>
Acrolein	mg kg <sup>-1</sup> fuel	216	10.4	9.47	1.37	2.30
Benzene	mg kg <sup>-1</sup> fuel	152	9.25	7.36	2.89	2.16
Benzyl chloride	mg kg <sup>-1</sup> fuel	1.00	1.40	1.95	1.29	1.19
Bromodichloromethane	mg kg <sup>-1</sup> fuel	1.24	1.45	2.13	1.47	1.39
1,3-Butadiene	mg kg <sup>-1</sup> fuel	241	8.12	5.48	<0.97	0.74
2-Butanone	mg kg <sup>-1</sup> fuel	29.4	10.7	5.44	4.27	4.80
C3 hydrocarbons	mg kg <sup>-1</sup> fuel	767	26.7	20.0	5.31	4.55
Carbon disulfide	mg kg <sup>-1</sup> fuel	1.31	2.78	1.26	1.09	0.58
Carbon tetrachloride	mg kg <sup>-1</sup> fuel	0.74	0.62	1.16	0.55	1.05
Chlorobenzene	mg kg <sup>-1</sup> fuel	0.71	1.25	<2.84	0.94	<1.92
Chloroform	mg kg <sup>-1</sup> fuel	0.90	1.07	1.55	1.16	1.01
Cyclohexane	mg kg <sup>-1</sup> fuel	1.32	0.94	1.42	1.09	0.92
1,2-Dichlorobenzene	mg kg <sup>-1</sup> fuel	0.97	1.76	<3.7	1.42	<2.49
1,3-Dichlorobenzene	mg kg <sup>-1</sup> fuel	0.88	1.69	1.55	0.89	0.80
1,4-Dichlorobenzene	mg kg <sup>-1</sup> fuel	0.85	2.22	1.45	0.77	0.76
Dichlorodifluoromethane	mg kg <sup>-1</sup> fuel	1.64	1.28	1.58	1.45	1.06
Ethylbenzene	mg kg <sup>-1</sup> fuel	13.1	2.87	2.98	1.71	3.34
Ethylene	mg kg <sup>-1</sup> fuel	1843	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>
4-Ethyl toluene	mg kg <sup>-1</sup> fuel	5.66	1.06	1.91	1.06	1.22
Formaldehyde	mg kg <sup>-1</sup> fuel	1317	60.9	45.2	3.30	4.10
Heptane	mg kg <sup>-1</sup> fuel	3.28	1.78	2.76	2.34	1.91
Hexane	mg kg <sup>-1</sup> fuel	5.22	3.24	4.77	6.13	3.39
2-Hexanone	mg kg <sup>-1</sup> fuel	7.39	1.59	<2.52	<1.8	<1.7
Isopropyl alcohol	mg kg <sup>-1</sup> fuel	3.55	2.37	2.61	2.36	5.24
Methane	mg kg <sup>-1</sup> fuel	1260	830	1450	470	700
Methyl chloride	mg kg <sup>-1</sup> fuel	0.53	0.79	0.67	0.31	0.39
Methyl isobutyl ketone	mg kg <sup>-1</sup> fuel	1.52	1.17	<2.52	<1.8	1.07
Methyl tert-butyl ether	mg kg <sup>-1</sup> fuel	0.59	<1.54	<2.22	0.87	0.75
Methylene chloride	mg kg <sup>-1</sup> fuel	1.55	1.43	1.98	4.80	2.02
Propylene/propyne	mg kg <sup>-1</sup> fuel	510	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>
Styrene	mg kg <sup>-1</sup> fuel	29.1	1.36	1.41	0.96	0.85
1,1,2,2-Tetrachloroethane	mg kg <sup>-1</sup> fuel	1.05	1.44	<4.23	<3.02	<2.85
Tetrachloroethene	mg kg <sup>-1</sup> fuel	1.81	2.05	2.43	2.90	1.68
Tetrahydrofuran	mg kg <sup>-1</sup> fuel	4.98	0.73	<1.81	2.35	<1.22
Toluene	mg kg <sup>-1</sup> fuel	69.5	8.73	11.5	8.76	6.59
Total nonmethane hydrocarbons	gC kg <sup>-1</sup> fuel	1.34	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>
1,2,4-Trichlorobenzene	mg kg <sup>-1</sup> fuel	1.43	3.30	2.13	<3.25	<3.07
1,1,1-Trichloroethane	mg kg <sup>-1</sup> fuel	0.92	1.17	1.80	1.16	1.90
Trichloroethene	mg kg <sup>-1</sup> fuel	1.13	1.56	2.16	1.53	1.37
Trichlorofluoromethane	mg kg <sup>-1</sup> fuel	1.44	1.10	1.66	0.75	0.72
1,1,2-Trichloro-1,2,2-trifluoroethane	mg kg <sup>-1</sup> fuel	0.93	1.05	1.19	0.76	0.87
1,2,4-Trimethylbenzene	mg kg <sup>-1</sup> fuel	24.3	3.62	4.75	2.23	3.13
1,3,5-Trimethylbenzene	mg kg <sup>-1</sup> fuel	6.38	0.86	1.48	0.76	1.05
Vinyl acetate	mg kg <sup>-1</sup> fuel	18.7	4.23	4.80	2.71	2.91
m&p-Xylene	mg kg <sup>-1</sup> fuel	31.7	8.41	8.01	4.63	9.88
o-Xylene	mg kg <sup>-1</sup> fuel	13.31	2.87	3.33	2.06	3.30

Table 1 - Emissions from C130 Exhaust Gases

#### **(11) RAF Brize Norton – Location of Police Dog Kennels.**



A letter [10] was written on 18th July 2011 to the Group Captain of RAF Brize Norton on behalf of the Brize Norton Parish Council (BNPC) expressing the Council's concern over the proposed re-location of the RAF Police Dog Kennels in the vicinity of Crash Gate 5, which is close to the properties to the south of the village in Station Road.

The Council stated that there were local concerns that the sound of barking dogs each morning and at feeding times would be an additional noise added to the sound of the aircraft, that would cause even more annoyance to the local residents. As a result, the BNPC requested that the location of the kennels be revised and ideally be re-located centrally within the air base.

The Group Captain replied to the BNPC [11] on 27th July 2011, stating that the relocation of the dog kennels was an essential prerequisite for the continued development of the new, on-base, single living accommodation and the development of a long term facility for a key supporting unit from RAF Lyneham to RAF Brize Norton. He further added that the decision was discussed with the Planning Officers who confirmed that this location for the dog kennels in that area met with the appropriate legislation and complied with the planning constraints placed upon their continued development of the air base.

As the barking of these dogs continued to be an annoyance to the local residents the BNPC wrote a further letter, [12] prior to the Local Consultative Working Group (LCWG) meeting, that was to be held on 28th January 2013, this time to the Wing Commander. The letter again expressed their concerns about the location of these kennels being so close to the southern end of the village and suggested that some form of screening should be provided to reduce the noise from this source.

There does not appear to have been any further mention in the January and July 2013 LCWG Meetings of the annoyance to the local residents of the continuous barking of the dogs from the kennels. However, it is mentioned again at the LCWG Meeting in October 2013. [13]

The Squadron Leader of OC Station Services Squadron provided an update on the investigation into reducing the noise from the dog section. He mentions that an attempt to establish a sound buffer using a Leylandii hedge proved ineffective due to unsuitable ground conditions. Therefore, he stated, that it would be more effective to erect fencing to absorb the noise. As a result, he concluded, that this would be installed within the current financial year.

Since there was no further mention by the BNPC at the LCWG Meeting [14] held in May 2017, it is assumed that the fencing has been effective in absorbing the noise to some degree, thereby making it less obtrusive to the local residents living in the southern part of the village.



## **(12) Airfield Lighting – Pollution.**

At the LCWG Meeting held in October 2011[15], several Parish Council Members raised issues around the increased lighting on the Station. The Wing Commander confirmed that they were aware of the problems created by the need for increased lighting both on the airfield and other key locations within the Station. As a result, he stated that he would seek an update from the Infrastructure Team as to what can be done to alleviate this.

At the LCWG Meeting held in April 2012 [16] the Wing Commander explained that a contract had been awarded at a cost of £195,000 to redirect the lighting in November 2011. As a result, the members agreed that significant improvements had been made with the main Aircraft Servicing Platform. However, there were still some concerns over the security lighting associated with the Explosive Storage Area on the Base and the lights at the eastern end of the apron. The Wing Commander informed the members that a trial was being conducted with LED lights on the Station that might be able to improve the situation.

The issue with the lighting was raised again at the LCWG Meeting in January 2013 [17] A member asked why the halogen lights on the Station needed to face upwards, thereby causing unnecessary light pollution and if there was any chance of them being recalibrated in the future.

The Squadron Leader stated that these lights would be replaced in the summer by LED lights. Furthermore, the Group Captain explained that the lights around the Tactical Medical Wing building, now under construction for security reasons would be reduced once the building was completed. Also, the new building would be fitted with motion sensors so that during the times when the building was unoccupied the lights would be off.

An update on the lighting issue was given at the LCWG Meeting held in July 2013 [18]. Where it was confirmed that the halogen lights were about to be replaced by LED lights and that lights around the Explosive Storage Area had been re-profiled to point downwards, as far as possible. Also, it was mentioned that the Tactical Medical Wing was completed and therefore the spotlights had been removed and the remaining lights were now operated from motion sensors.

As no further mention was made of the lighting at the LCWG Meeting held in May 2017 [14] it is assumed that this issue had been resolved to the satisfaction of the Parish Council Members attending that Meeting.

## **(13) Parish Water Courses, Drainage and Wastewater Issues related to RAF Brize Norton**

In May 2008 the WODC released their report [19] titled: Parish Flood Report - Brize Norton, that detailed the possible causes for the village to flood in 2007 along with recommendations to avoid similar flood occurrences in the future.

One of the apparent causes for the flooding in Station Road which was mentioned in section 5.4.2 of the report related to the air base as follows:

### **5.4.2 Culvert surcharging at RAF Brize Norton**

Site walkovers indicated that the 2 x 900mm culverts would not be sufficient to convey flood flows as culverts in the headwaters of the system at Kilkenny Lane are 600mm diameter serving a fraction of the catchment area. Local residents confirmed that during July 2007 waters backed up from the RAF culverts, flowed in an easterly direction, crossing farmland and inundating properties to the east of Station Road.

As result of this report, a Water Management Working Group was set up with representatives from RAF Brize Norton, Oxfordshire County Council, West Oxfordshire District Council, Thames Water, Environment Agency and Parish Councillors representing Alvescot, Bampton, Black Bourton and Brize Norton. These representatives

formed a powerful and productive body that met with much success in reducing the flood risk to the air base and the surrounding area.

However, in April 2010 [20] the Chairman of the Brize Norton Parish Council (BNPC) wrote to the Wing Commander of RAF Brize Norton expressing the need to maintain this forum. However, it would appear that the RAF were keen to reduce the frequency of these meetings and possibly closing it altogether.

As a result, it would seem that these issues, as they arose, would be dealt with by direct written correspondence to the Station Commander because in May 2012 the Chairman of Brize Norton Parish Council (BNPC) wrote a letter [21] to him outlining some of the concerns expressed by the parishioners of Brize Norton. Amongst those concerns were the following issues:

Wastewater disposal.

*The local sewerage pumping station is already over capacity. To this situation, the MOD have added waste from the Dog compound and plan to connect the A400M hangar waste to this pumping station. Has assurance been received from Thames Water that this additional loading can be catered for?*

Furthermore, concerns were also raised regarding the surface water and wastewater drainage systems

*The surface water drainage system in this area is complicated. The recently constructed aircraft-servicing platform laid down a vast area of concrete. To cope with the surface water run-off a very large underground tank system was constructed. It is understood that this system is to be replaced to accommodate additional run-off from proposed new build of the new hangar. In addition to the actual build a large car parking area is proposed for up to 160 vehicle spaces. This car parking area will require the rigid enforcement of SuDS to ensure that run-off is strictly controlled wherever the hangar is finally built. In addition to this current planning application other recent additions should be taken into consideration to ensure some "joined up thinking" for the overall drainage plan. A large hangar and associated training buildings has recently been completed to cater for the new tanker/passenger aero planes which are already coming into service. Quantity 2 new large "rubber hangars" have been installed close to the eastern boundary fence. A further new hangar for the C130 airplanes is already under construction. To the north of Carterton Road, a new large office complex and tented training area is being constructed. All of these new builds' drain into an unnamed stream to the east of the camp and pose a continuing threat of flooding to Brize Norton and villages downstream.*

*It is noted that the intent is to drain foul to a sewerage pumping station (SPS) located in Station Road, Brize Norton. BNPC understand that this SPS is already working at maximum capacity. Problems are encountered within the village, during even moderate rainfall, whereby foul backs up to the extent that the flushing of toilets and using kitchen sinks is not possible, as the water will not drain away. It is understood that a recently built dog pound has already been connected to this SPS. The proposed hangar will employ up to 500 personnel, this figure was briefed by the Defence Infrastructure Organisation at a public display in Carterton Town Hall. It should be noted that the figure of 500 is over half the population of Brize Norton. The increased demand on the local SPS will undoubtedly exacerbate the existing problems of overloading the system. In the planning application the numbers of personnel to be employed is significantly less, the briefed figure of 500 personnel has been checked with other Parish representatives who attended the meeting in Carterton and confirmed as 500.*

**(Note: The foul water emanating from the now completed hangar, is directed to the Carterton SPS in Black Bourton.)**

On 9th March 2016, the Chairman of the Brize Norton Parish Council (BNPC) sent an e-mail [22] to RAF Brize Norton regarding a leakage of oil/fuel into a village water course.

The Chairman stated: -

*You may recall at the LCWG meeting held on the 5th February 2016 we had a conversation ref fuel smell near to the police dog section to the east of RAF Brize Norton.*

*Please see attached photo taken by local resident on Thursday 3rd March.*



Fig 27: Polluted Water Course

*The photos clearly show oil/fuel on the surface water.*

*It appears the substance is below the exit area of the twin 900 mm piped system, which runs under or close to fuel storage areas. It is known historically there were fuel storage facilities to the north and west of the entrance to the underground watercourse piped system and having worked closely with members of RAF Brize Norton following severe flooding in 2002/2007 I am aware of drainage that enters the main watercourse from the camp. May I also request that the area above the entrance to the underground system is checked?*

*The Parish Council are most interested to hear details of your finding at the earliest opportunity before deciding on a further course of action if your findings are inclusive.*

**(Note: The fuel tank which is adjacent to the two 'surface water' culverts has now been emptied and it would appear that the pollution has been dramatically reduced. BNPC await information as to what will happen to this fuel tank.)**

The Chairman of BNPC sent another e-mail [23] to RAF Brize Norton, this time regarding concerns about a blockage to the water grill.

*To Media Communications Officer RAF Brize Norton.*

*Please see attached photo of blocked grill, which is located next to the RAF Police dog section.*

*Likely consequences of the grill being blocked are road flooding, flooding to property on the base and in Brize Norton village.*

*With the continual movement of RAF personnel, it appears the importance of maintenance of the stream is either being forgotten or ignored. It is requested this matter be given urgent attention.*

It would appear that the issues concerned with the water management have now been resolved to some extent since none of these issues were raised at the LCWG Meeting in May 2017.



#### **(14) Parish concerns over Toxic Odours emanating from Aviation Fuel**

In the LCWG held in October 2011 [15] concerns were raised over the strong smell of aviation fuel occurring at certain times. The Chairman of the Meeting stated that this had been discussed with WODC who had confirmed that it was highly unlikely that the Station would be producing excess levels due to the relatively small number of aircraft movements. At the LCWG Meeting in April 2012 [16] concerns were raised again over the strong smell of aviation fuel and some members had complained that they had experienced fuel falling on them.

The Air Command representative asked all members to ensure that the incident is recorded and reported to the Station. He explained that there were strict rules about fuel jettison and records were meticulously kept whenever an incident or emergency occurred. The member from WODC informed the forum that measurements had been taken in Witney and the surrounding area and that the Nitrous Oxides measurements were greater on a particular road in Witney than those associated with the airfield.

However, at the LCWG Meeting in October 2013 [13] the member from Alvescot also reported a strong smell of aviation fuel. For this incident the Stations Environmental Protection Officer (SEPO) had carried out a comprehensive investigation.

His findings were that the odour of fuel was due to the high air temperature and light wind resulting in lingering fuel aroma. The SEPO confirmed that the odour was the result of burnt fuel and not unused aviation fuel.

No further mentions were made about the unacceptable smell of fuel odour at any of the future LCWG Meetings, so therefore no further action has been necessary.

#### **(15) Repatriation of Military Personnel at RAF Brize Norton**

In the past, those military personnel that had lost their lives in overseas conflicts, were flown into RAF Lyneham for repatriation.

However, on the 26th August 2011 [24] the government announced that a new repatriation centre had been constructed at RAF Brize Norton.

The government stated that:

*The facilities include a £1.9m repatriation centre and the newly named 'Britannia Gate' through which the cortèges of fallen Service personnel will leave RAF Brize Norton.*

*From Thursday, 1 September 2011, all repatriation flights for those killed in operational theatres will go to RAF Brize Norton.*

*The centre includes a calm and quiet space away from the bustle of the station where families can gather ahead of the repatriation flight to watch the aeroplane landing and then observe the formal military repatriation ceremony.*

*There is also a Chapel of Rest where families can spend private time with their loved ones before the journey to the John Radcliffe Hospital.*



*Fig 28: Aircraft landing at Brize Norton with fallen service personnel.*



*Fig 29: New 'Britannia Gate' at RAF Brize Norton for the repatriation cortège to exit from*



*Fig 30: Repatriation cortège travelling through the village along Station Road*





*Fig 31: Members of the British Legion on Station Road with their military flags lowered to pay homage to those service men and women that have given their lives for our country.*



*Fig 32: The Remembrance Garden*

*Fig 33: Map of Route taken by the Repatriation Cortège*

On the 1st September 2011, the BBC news [25] stated that:

*Repatriations previously went through RAF Lyneham in Wiltshire, where residents of the nearby town of Wootton Bassett would line the streets.*

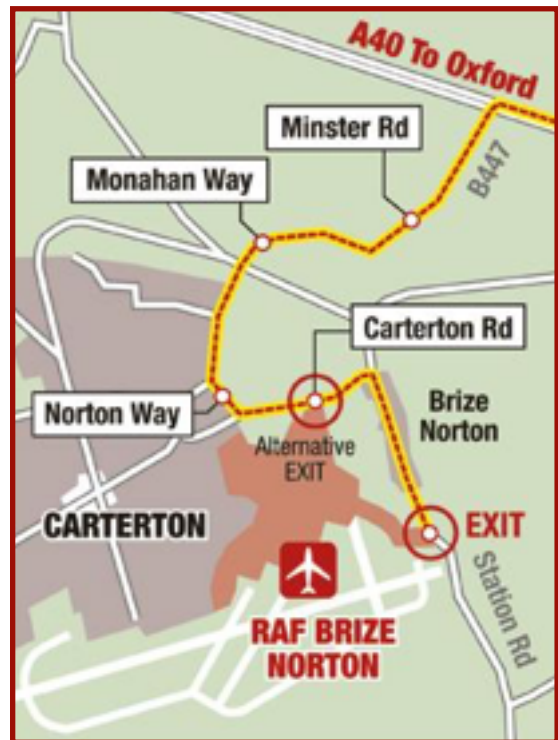
*Future cortèges will now leave a new £2.8m repatriation centre at Brize Norton, near the town of Carterton, where a memorial garden has been built.*

*A union flag, which was lowered for the final time at a ceremony on Wednesday in Wootton Bassett, was handed over by the mayor of the town, Councillor Paul Heaphy.*

*He presented it to the chairman of Brize Norton Parish Council, Councillor Keith Glazier, and the deputy mayor of Carterton, Councillor Adrian Coomber.*

*The flag was then raised in the memorial garden in Norton Way, where a dedication ceremony which began at 10:30 BST was led by the Bishop of Oxford, the Rt Rev John Pritchard.*

*The (former) Prime Minister David Cameron led tributes to the armed forces that "made our country great".*



*Fig 33: Prime Minister David Cameron Speaking at Repatriation Ceremony*

Speaking at the ceremony, the prime minister said:

*My job comes with a huge number of great privileges and a lot of interesting people to meet. But there is no greater privilege than meeting those who serve our country.*

*I cannot stress enough the sacrifices they make for us and we cannot thank them enough for what they do.*

*And we cannot say enough how proud we are of them and all that they do for our country.*

The repatriation cortège exits through 'Britannia Gate' located on Station Road, and passes through the centre of the village, stopping at the Norton Way Memorial Garden. Here, the cortège stops for a short period of time to allow family, members of the armed forces, British Legion, dignitaries and parishioners to pay their last respects

The closure of Station Road to allow the cortège to pass through has had some minor effect on the residents living along it whether travelling by car to and from their properties, and those people wishing to gain access to The Chequers Public House and A. K. Timms & Sons Ltd, builders merchants, but apart from that, there has been very little detrimental impact on the village itself.



However, the majority of residents living in the vicinity of Station Road and Carterton Road regard it as an honour that the cortège passes through their village and many of them take part in showing their respect to the families and loved ones of the service men and women that have died as the cortège passes by.

It is rather a solemn reminder to the residents in the village that when they see and hear the aircraft taking off from RAF Brize Norton transporting service men and women into conflict zones around the world, that some may never return alive.

Note: The entire repatriation route between Britannia Gate and the A40 is within the parish of Brize Norton. The only exception is a 120M section of road at the south end of Norton Way which runs from the roundabout at the junction of Carterton Road and Norton Way up to the entrance to West Oxfordshire Business Park. This short section is within the Carterton boundary.

### **(16) RAF Brize Norton Employment Status [26]**

There were 7,350 people employed at the Base. This comprises of 5,000 Service Personnel, 2000 Civilians and 350 Civil Servants.

*(Source: RAF Brize Norton Local Consultation Working Group Meeting held on the 17th May 2017)*

Update 1. There are currently 7,236 people employed at the Base. This comprises of 5,736 Service Personnel, 1,200 Civilians and 300 Civil Servants.

*(Source: RAF Brize Norton Local Consultation Working Group Meeting held on the 2nd April 2019)*

Update 2. There are currently 7,304 people employed at the base. This comprises of 5,801 Service Personnel, 1,181 Civilians and 322 Civil Servants.

*(Source: RAF Brize Norton Local Consultation Working Group Meeting held on 8th December 2020)*

The 'Real Estate' and infrastructure are now at capacity and the latest elements have been completed by transient workers. There is no funding available for any changes to the infrastructure, so no major building works will take place.

Project Gateway, which is now completed will not afford any increases in manpower.

Strategic Defence Review 2015- achieved further reductions in MOD personnel and Civil Servants along with additional cost savings. Military Personnel are at a standby state and will not increase, it is in fact more likely to decrease.

Planning assumptions for SDR 2020 will include a reduction in operational consultants, Civil Servants and Service Personnel.

Two new aircraft, Air Tanker (Voyager) and Airbus (A400M) have created new jobs but these positions are now fulfilled.

RAF Brize Norton will continue to replace military personnel with civilian contractors. With this in mind there is a potential for approximately 200 new jobs by 2021 and a further 200 by 2025 (400 in total.)

Update. Due to the concern about having too few military personnel available in times of operational requirements, the replacement of them with civilian contractors has now ceased.

*(Source: RAF Brize Norton Local Consultation Working Group Meeting held on the 2nd April 2019)*

Overall RAF Brize Norton will remain at a 'steady state' for employment over the next decade.

For reference, there are 5 RAF Reserve Units (part time personnel not included in the establishment numbers) based at Brize Norton.

RAF Brize Norton also manage a further 8,000 'parented' personnel who are based 'off-site'.

References:

- 1 *RAF Brize Norton History 1935 to 1999* <http://rafbrizenorton.yolasite.com/history.php>
- 2 *RAF Brize Norton - Information Handbook*
- 3 *The Witney & East Gloucestershire Railway.* <https://fairfordbranch.co.uk/Bampton.htm>
- 4 *Witney Gazette: edition dated 19th November 2013*
- 5 *UK Defence Journal:* <https://ukdefencejournal.org.uk/atlas-aircraft-hangar-opened-defence-minister/>
- 6 *Defence Infrastructure Organisation: RAF Brize Norton C130 EGR Noise Assessment Technical Report: Dated August 2012: AMEC Environment & Infrastructure UK Limited*
- 7 *Brize Norton Noise Management Procedures – 29th October 2014*
- 8 *DEFRA Report: Dated 15th February 2018: EMISSIONS OF AIR POLLUTANTS IN THE UK, 1970 TO 2016*
- 9 *United States Environmental Protection Agency (EPA): Evaluation of Air Pollution Emissions from Subsonic Commercial Aircraft Report dated April 1999.*
- 10 *Letter from BNPC to Group Captain Stamp, dated 18th July 2011*
- 11 *In reply; Letter from Group Captain Stamp to BNPC, dated 27th July 2011*
- 12 *Letter from BNPC to Wing Commander Cole, dated January 2013*
- 13 *Minutes of Local Consultation Working Group Meetings (LCWG) held at RAF Brize Norton in October 2013*
- 14 *Minutes of Local Consultation Working Group Meetings (LCWG) held at RAF Brize Norton in May 2017*
- 15 *Minutes of Local Consultation Working Group Meetings (LCWG) held at RAF Brize Norton in October 2011*
- 16 *Minutes of Local Consultation Working Group Meetings (LCWG) held at RAF Brize Norton in April 2012*
- 17 *Minutes of Local Consultation Working Group Meetings (LCWG) held at RAF Brize Norton in January 2013*
- 18 *Minutes of Local Consultation Working Group Meetings (LCWG) held at RAF Brize Norton in July 2013*
- 19 *The WODC report titled: "Parish Flood Report - Brize Norton" dated May 2008*
- 20 *Water Management Working Group letter to Wing Commander Bettridge dated 15th April 2010*
- 21 *Letter from BNPC to Group Captain Stamp, dated May 2012*
- 22 *e-mail from BNPC to RAF Base 9th March 2016*
- 23 *e-mail from BNPC to RAF Base 6th April 2016*
- 24 *Ministry of Defense on-line Section:*  
[https://www.gov.uk/government/news/new-repatriation-centre-at-raf-brize-norton.](https://www.gov.uk/government/news/new-repatriation-centre-at-raf-brize-norton)
- 25 *BBC news on-line 1st September 2011: <https://www.bbc.co.uk/news/uk-england-oxfordshire-14732765>*
- 26 *Brize Norton Parish Council: Report to Planning Inspector, dated 30th May 2017*  
*(Updates added 18/05/2019)*
- 27 *BBC News on-line <https://www.bbc.co.uk/news/uk-england-oxfordshire-18927492>*
- [28] *Appendix 06 Document H - Section 3 Local/Night Flying and EGR Noise Abatement Procedures*

## DOCUMENT H Section 2

### MOD OPERATIONAL LAND AREAS

#### AREAS OF RAF BRIZE NORTON INC. TACTICAL MEDICAL WING (TMW) OPERATIONAL LAND WITHIN THE PARISH OF BRIZE NORTON

LOCATION	AREA IN ACRES	AREA IN HECTARES	PERCENTAGE
BRIZE NORTON PARISH AREA	3025	1224	100
RAF BASE AREA WITHIN PARISH	467	189	15.4
TMW AREA WITHIN PARISH	10	4	0.33

**RAF BRIZE NORTON OCCUPIES 16% OF BRIZE NORTON PARISH**

#### AREAS OF RAF BRIZE NORTON OPERATIONAL LAND INC. TACTICAL MEDICAL WING (TMW) WITHIN THE LOCAL PARISHS

LOCATION	AREA IN ACRES	AREA IN HECTARES	PERCENTAGE
RAF BASE AREA	1135	460	100
RAF BASE AREA IN BRIZE NORTON	477	193	42
RAF BASE AREA IN CARTERTON	250	101	22
RAF BASE AREA IN BLACK BOURTON	205	83	18
RAF BASE AREA IN BAMPTON	185	74	16
RAF BASE AREA IN ALVESCOT	18	9	2

**42% OF RAF BRIZE NORTON LAND AREA IS WITHIN BRIZE NORTON**

N.B. THESE FIGURES EXCLUDE MOD HOUSING IN CARTERTON

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# DOCUMENT H Section 3

## LOCAL/NIGHT FLYING AND EGR NOISE ABATEMENT PROCEDURES

### All times are LOCAL.

1. Ref A details the reasons why the production of noise at RAF Brize Norton must be treated sensitively. This order details how activity known to generate significant noise should be managed. Details of ATC noise abatement procedures are found within published Terminal Approach Procedures.

### Local Flying Times

2. Station based ac wishing to conduct visual circuits at RAF Brize Norton must do so within the following times:
  - a. Between 0700 hrs and 2000 hrs Monday and Friday.
  - b. Between 0700 hrs and 2300 hrs Tuesday to Thursday.
3. Ac returning from a sortie, local or otherwise, outside of these times can make approaches as follows without seeking Aerodrome Operator (OC Ops Wg) approval to do so:
  - a. Between 2000 hrs and 2130 hrs Monday; a single approach to 'touch and go', a Low Approach into a single circuit, or a further single Instrument Approach to land.
  - b. Between 2300 hrs and 2359 hrs Tuesday to Thursday; a single approach to 'touch and go', a Low Approach into a single circuit, or a single Instrument Approach to land.

### 4. Night Flying Limitations.

While the advantages of trg in a live environment are recognised, the following limitations apply in order to allow appropriate management of the level of noise disturbance within the CTR.

- a. The absolute maximum of ac concurrently conducting a combination of circuits and training Instrument Approaches will be restricted to 3.
- b. The absolute maximum number of cumulative visual circuits flown by Station based military aircraft in a 24hr period is 40, including a maximum of 30 after evening nautical twilight.
- c. The total number of low-level circuits flown at RAF Brize Norton in a 24hr period is 6. Helicopters conducting JADTEU trials work are exempt from this restriction.
- d. There are no restrictions on the number of trg instrument approaches flown in a 24hr period.

### 5. Consecutive visual circuits by Station based ac.

In daylight, Station based ac are restricted to a maximum of 6 consecutive visual circuits; after evening nautical twilight this restriction reduces to 4 consecutive circuits. After which, aircraft must then then either carry out an intermediate landing or stop go, go out to Initials or complete an Instrument Approach.

### 6. Use of the Bzn circuit by visiting Service ac.

Service ac from other units can be accepted for PDs for one approach only, between 1700 hrs and 2000 hrs Monday and Friday, 1700 hrs and 2300 hrs Tuesday to Thursday. Approval is to be sought from SLOps prior to Northolt-based Service ac being accepted for PDs between 2000 hrs and 2300 hrs, Monday, Friday or at weekends. If SLOps is unavailable, the ATC Supervisor/ATCO ic may authorise PDs from Service aircraft, subject to controller workload.

### 7. Management of Night Flying Reqmts.

Station-based ac wishing to conduct any training on the airfield outside of the times stated in para (2) or exceed the limitations at para (3) must have approval from the Aerodrome Operator. Accordingly, Station A5 will capture all weekly night flying reqmts as part of their battle rhythm and inform both the DOC and ATC by 1500 hrs every Friday. ATC will track all activity on a daily basis; the request night flying reqmts published on the preceding Friday will be protected by ATC. Should ATC require a priority decision on day versus night flying, this should be sought from the Senior Operator to the DDH.



All requests staffed through Station A5, must state the operational necessity - including the impact of non-approval. Consideration will be given to the availability of hrs of darkness and recent or planned exported trg opportunities supported by enabling functions. Short-notice requests made after 1700 hrs Monday to Friday, on a weekend or Public Holiday, are to be staffed directly through the DOC for approval from the Aerodrome Operator. The Aerodrome Operator will pay particular attention to the operational necessity, recent activity levels and disturbance complaints, potentially approving with flying caveats to reduce noise disturbance.

#### **8. RAF Brize Norton Flying Club.**

The Station Flying Club is authorised to operate within the following periods:

- a. The Club may operate 7 days per week including Public Holidays.
- b. Club operated aircraft may operate from 0800 hrs to 2300 hrs except for conditions stipulated in para 8(c) below.
- c. Club operated aircraft may not conduct circuit flying between 1900 hrs and 2300 hrs unless approval has been granted by SLOps. Such requests are to be at least 24 hrs in advance. There is to be no visual circuit flying between 1900 hrs and 2300 hrs on Saturdays and Sundays.
- d. Club operated aircraft may conduct a take-off to leave the CTR and a single landing, on flights of at least 2 hrs duration, at any time between 2300 hrs and 0800 hrs. A radar service from Brize ATC may not always be available. The DOC is to be informed of the flight details 24 hrs in advance and pass such details to the ATC Supervisor.

#### **9. Avoids in the Circuit Pattern.**

Aircraft operating in the RAF Brize Norton circuit must adhere to Ref C and avoid direct overflight of the listed towns/villages and the Cotswold Wildlife Park.

#### **10. Recording of Approval Requests.**

The DOC is to record all requests, rejections and approvals for OOH activity. SATCO is to maintain a record of all flying activity at the airfield.

#### **11. OOH External Notifications.**

The DOC will forward all approved OOH requests to the Station MCO for possible notification to the local community through Social Media and / or the Station Homepage.

#### **Engine Ground Runs (EGRs)**

**12.** Ref B contains full details regarding the procedures for EGRs.

**13. General.** To minimize noise disturbance to the local community, EGRs are to be conducted under the following restrictions:

**a. 0700-1900 hrs (Normal Working Hours).**

To minimize noise disturbance to the local community, routine EGRs are only to occur 0700 hrs to 1900 hrs Monday to Saturday and 0830 hrs to 1800 hrs on Sundays.

**b. 1900-2300 hrs (Outside Normal Working Hours).**

EGR requests between 1900 hrs to 2300 hrs require the approval of the DOC. The DOC is to make a judgement of the operational requirement against the potential noise disturbance to the local community and if uncertain, seek advice from SLOps.

**c. 2300-0700 hrs (0830 hrs on Sunday and Bank Holidays) (Quiet Hours).**

EGRs which are required during quiet hours must be authorised by either the Aerodrome Operator or OC ELW (CAE). Any such requests must be for exceptional or operational reasons and are to be staffed through the DOC.

**14. EGRs Locations.**

Full details of authorised EGR locations are contained within Ref B. The default for C130 EGRs are bays 29 and 30, tow on/off only. If these are unavailable, the DOC may authorise the use of alternative parking bays on the main ASP. EGRs must not be conducted on bays 26-27 due to surface FOD risk. If these are unavailable, the DOC, in consultation with the DEOC, may authorise the use of alternative parking bays on the main ASP.

**15. Recording of EGRs.**

The DOC is to record all EGR applications (approvals and rejections) in the DOC EGR Log.