



# Norfolk Gliding Club Ltd

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## Norwich to Tilbury EN020027

Issue Specific Hearing – April 28<sup>th</sup>

Written Post-Hearing Submission

IP Reference Number [REDACTED]

### Summary

This submission is concerned with the section of the proposed overhead line that passes Tibenham airfield, its proximity to the airfield and the aviation safety issues its construction will cause. With respect to that, we believe the project

Is in planning policy matters

Contrary to the guidelines of EN-1 section 5.5

Contrary to the guidelines of EN-1 para 4.2.15

Contrary to the guidelines of the NPPF para 200

Is in aviation guidance matters

Contrary to the guidelines provided by the CAA and their Airfield Advisory Team, the Combined Aerodrome Safeguarding Team (CAST) and the General Aviation Awareness Council (GAAC)

Contrary to the guidelines provided by the BGA

Contrary to the conclusions in Dr Mark Eddowes' report

In airfield operational matters

Would require unacceptable operational changes contrary to planning policy guidelines

In safety risk terms

Produces an 'unacceptable' risk assessment within the CAA's CAP 1059 Safety Management Guidance tolerability matrix

## The issues

Since the first consultation of 2023 Norfolk Gliding Club has set out their grave concerns about the height and proximity of the proposed pylon route and the aviation safety issues a 200ft 'electrified wall' so close to the airfield represents.

As the Inspectorate will be aware these concerns can be categorised under the headings of  
Engine Failure After Take Off (EFATO)

Aerotow launches

Gliding competitions and the returning cross-country gliders

Increased collision risk with aircraft departing from Priory Farm due to circuit modifications

Potential collision risk with drones and helicopters servicing the pylons

Loss of amenity and financial implications

And have been explained in detail in the Relevant and Written Representations submitted previously

On behalf of Norfolk Gliding Club, the key points are that:

There was no attempt at collaboration (ref EN-1 paras 5.5.2 and 5.5.5) prior to the proposed route being published in 2022.

National Grid's Aviation Consultants have not properly addressed the issue of aviation safety and have not evaluated the nature of the activity at Tibenham.

National Grid as an organisation should uphold the highest safety standards associated with its infrastructure and do not appear to be aware that ASA's advice was lacking in terms of safety margins and the potential for fatal accidents as confirmed by reference to the CAA and BGA guidelines

ASA claims that there is a lower safety threshold at unlicensed aerodromes than at those that are licensed. That is not correct as confirmed by the Civil Aviation Authority

ASA has not taken account of the specialist knowledge that we, as operators, have of the operations at our aerodromes. We are responsible for the safe running of our airfields and have huge knowledge and experience to the extent that the CAA recognises that only the aerodrome operator can hold expert opinion on the safety of proposed obstacles at their airfield

Aviation should have been considered at the project's inception on day 1 as identified in EN-1 section 5.5. It was not.

EN-1 para 5.5.15 makes it clear that safeguarding applies to both licensed and unlicensed aerodromes

Despite claims to the contrary, there was no engagement prior to the preferred route being published and following ASA's appointment there has been no proper engagement since.

The Applicant has produced copious quantities of material, but just defaults to the *'there is no risk to aviation safety'*, without reference to the technical issues and risks which we have identified and which have been endorsed by Dr Eddowes, an aviation risk assessment specialist, and by the CAA's Airfields Advisory Team (We have enclosed these reports with our previous submissions.)

In terms of servicing the proposed pylons, the CAA state that it is illegal to fly a drone within 5km of an airfield. This protected area, known as a Flight Restriction Zone, extends 5km from the runway ends up to 2,000ft above ground level

As we have identified, the ASA approach is flawed according to various aviation bodies but National Grid does not seem to have sense checked that methodology

And of course, it is not just Tibenham but Priory Farm, Chase Farm and Raydon Wings all of whom have had the same experience.

The key point for the Inspectors, is that aviation accidents do occur and an important body such as National Grid should have done everything possible to demonstrate that it had designed the scheme so as to make that risk as low as reasonably possible. We are aware of another National Grid project, supported by another consultant, which is addressing aviation safety properly – why are National Grid operating with dual standards?

The risks here could easily have been addressed at an early stage by a minor design-led changes to the route through realignment or the undergrounding of short lengths.

There is no evidence in the NG document that alternative routes were even considered. Reviewing the documents looking for the word 'alternative,' the use of this word is mostly in the context of

*'It is assessed that existing circuits can continue to be used safely, overflying the overhead line at a safe height from which there would be a **range of alternative landing sites in the event of an emergency.**'*

In a low-level emergency there is rarely time to find an alternative landing site which is why all guidance emphasises the need to continue in a straight line with only minor deviations.

We have been asked by the Applicant to sign off on the Airfield Impact Assessment (produced by ASA) and the draft Statement of Common Ground. To help with our understanding of the approach taken, the Applicant agreed to provide written statements that would support and clarify that approach prior to the consultation of August 2025. In the event the information was and continues to be withheld. Until such time as it is made available to Norfolk Gliding Club we cannot agree to either document and the SoCG must remain 'under discussion'

One of the statements agreed by National Grid to be submitted by them prior to the consultation related to their mitigation proposals as the 'agent of change' and identified the following options

1 - The pylon route would be re-aligned to outside the 5km safeguarding zone. This would be acceptable to NGC and would remove all our aviation safety concerns

2 - The pylon route would be undergrounded whilst it crossed through the 5km safeguarding zone. This would be acceptable to NGC and would remove all our aviation safety concerns

3 - Leave the route alignment as proposed but reduce the height of the pylons whilst they crossed through the 5km safeguarding zone. This would not be acceptable to NGC since it did not remove the obstacles from the EFATO landing areas as shown in the previously submitted diagrams

Although either option 1 or 2 would have been acceptable to NGC (and we believe Priory Farm) National Grid chose not to present them opting instead to stay with the alignment they developed prior to any engagement with the two airfields.

We note that NG has proposed some changes to its scheme. It is not too late to make relatively minor adjustments to a major scheme such as this by proposing option 1 or 2 so as to make it possible for well-established airfields to continue to operate safely.

### **In conclusion**

The proposal is contrary to the planning guidelines within the NPS EN-1 and the NPPF in terms of the adverse effects on aviation safety and financial viability of existing airfields

The Applicant is in breach of its obligations to collaborate with Tibenham and the other affected airfields in accordance with EN-1 section 5.5 prior to publication of the proposed route

The proposal is contrary to the guidelines provided by the CAA and other aviation bodies such as the GAAC and BGA which we are required to abide by

The proposal is contrary to the conclusions identified in the report by [REDACTED], an aviation risk specialist

In order to continue to operate within the guidelines of the CAA and BGA we would have to make unacceptable operational changes which would result in a loss of amenity and financial implications

Until such time as the agenda items 1 to 3 of the consultation held in August 2025 are provided, the Airfield Impact Assessment and Statement of Common Ground must remain 'not agreed' and 'under discussion'

The Safety Management Guidance assessment within the CAA's CAP 1059 tolerability matrix defines the risk as 'unacceptable' requiring major mitigation measures to reduce the level of risk to as low as reasonably practicable

Adoption of the mitigation options 1 or 2 described earlier would be acceptable to Norfolk Gliding Club, allow us to develop, agree and sign the SoCG and redefine the risk assessment from 'unacceptable' to 'review/acceptable'

### **A possible way forward**

The reluctance of National Grid and their aviation consultants, [REDACTED] and Associates, to explain why their view on aviation safety significantly differs from that of the CAA and other professional bodies has destroyed any credibility in the advice they have been giving

The decision by National Grid to develop the route without collaboration with any of the various airfields that would be affected leaves us with the impression that the project was being imposed upon us

The statement made by the National Grid representative in the recent ISH which summarised suggested that

*'If you think that the proximity of the overhead line to the airfield represents an aviation safety hazard then close the airfield'*

Just serves to emphasise the impression that National Grid are seeking to use the status of a Nationally Significant Infrastructure Project to ride roughshod over any safety concerns

We understand that the North Humber to High Marnham NG route evaluation is being undertaken in line with the principles set out by the CAA AAT and the CAA CAST and the Aerodrome Operators involved.

A review of the Norwich to Tilbury route map suggests that only a small percentage of the route is involved with this aviation safety matter

We would therefore propose

That the Inspectorate direct National Grid to carry out a complete re-assessment of these sections of the proposed route

As part of that re-assessment, National Grid request that the consultants being used on the North Humber to High Marnham project replace ASA and fast track that evaluation by collaboration with the airfield operators and in line with the principles set out by the CAA AAT and CAA CAST

We believe that if the airfield operator's safety concerns are being taken into consideration rather than just being dismissed an acceptable solution could be developed with little delay to the overall project timescale

Produced by



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**ExA directed Action Points**

## **Agenda item 5**

### **Norfolk Gliding Club to provide further details of the origin of the 300ft figure**

#### **Background**

Because of the shape and positioning of an aircraft's wing, the air into which the aircraft flies passes above and below the wing at different speeds. Bernoulli's theorem states that for a laminar airflow any increase in speed results in a reduction of pressure, so because the air passing over the top of the wing moves faster, this creates an area of lower pressure over the top of the wing compared to the higher pressure underneath. It is the difference between these pressures that we call lift

The wing is presented at an angle to the airflow ("the angle of attack") and as that angle is increased, the speed of the air over the top surface increases with a corresponding increase in lift

However, with increasing angles of attack there comes a point at which this smooth flow of air detaches from the surface of the wing, the airflow becomes turbulent, the difference in pressure is minimal and the aircraft loses lift

At this point the aircraft is said to be stalled.

## Stalls and Spins

In many powered aircraft, it is possible when practising at high altitude to recover from a stall with a loss of height of about 200 to 300 feet. Whereas in most gliders, a prompt recovery results in a loss of height in the order of 300 to 500 feet since engine power cannot be used to increase speed in order to aid recovery

However, in such scenarios, the stall is anticipated and the recovery procedure is uppermost in the pilot's mind. If the stall is unintentional (which could be due to changes in the airflow, pilot distraction, or complete or partial loss of power), the height required for recovery will inevitably be greater.

If the aircraft's wings are banked (which would be the case in a turn to avoid power lines), the speed at which the aircraft will stall is increased due to the increased load factor (g-force). Correspondingly, the greater the angle of bank, the greater the increase in stall speed.

In a climb the aircraft will be at low speed, and so the risk of the aircraft stalling increases. If an aircraft stalls while turning, the risk that the aircraft will enter a spin (where only one wing is stalled and the other is still flying) also increases.

In the case of an aerotow launch the combination will also be at low speed but that speed is governed by the placard limits of the glider being towed some of which have a maximum aerotow speed of 60 knots.

To put that in perspective, the normal stall speed of a Robin DR400 (the type of tug aircraft used at Tibenham) is quoted as 52 knots. In a 45° banked turn (say to manoeuvre to avoid the proposed pylons) that stall speed will increase by around 20% to 62 knots. In the scenario of a slow speed tow due to the placard limits of the glider being towed such a turn would result in a low-level spin.

The height loss required for the successful recovery from a spin in a powered aircraft is considerably in excess of 300 feet and may be as high as 3,000 feet. In gliders, prompt action by the pilot can achieve recovery in the range of 400 to 500 feet. In both cases however, the direction in which the aircraft is travelling as it exits the spin is difficult to control and could involve the pilot needing to take further corrective action if close to the pylons

Where it is not possible to recover from a stall or a spin, the outcome will usually be fatal.

## Minimum turn height - gliders

Whilst there is no Civil Aviation Authority or British Gliding Association published rule that **prohibits** a glider/tug combination turning below 300 feet it is considered within the BGA to be both **best practice** and **standard teaching practice**.

The BGA's instructor manual states that when landing, the minimum recommended height for a turn onto final approach is 300 feet. This effectively means no turns below 300 feet as once an aircraft is on final approach it should only need to make small course corrections. It follows therefore that there should be no turns below 300 feet when a tug/glider combination is on climb-out. In the event of a low-level launch failure, the manual states that the glider must land straight ahead or a few degrees to either side.

The RAF Gliding and Soaring Association specifically prohibits turns below 500 feet when on aerotow.

## Minimum turn height – powered aircraft

As with gliders, whilst there is no Civil Aviation Authority published rule that **prohibits** a powered aircraft turning below 300 feet it is considered to be both **best practice** and **standard teaching practice** within many flight training schools to maintain straight and level flight until at least 500 feet above ground level

For comparison, in the USA, the standard FAA departure procedures require straight and level flight until at least 400 feet above ground level.

The standard teaching practice for powered aircraft is that if engine failure after take-off occurs below 500 feet, the pilot should land straight ahead within a cone 30° either side of the runway heading.

The CAA also recommends that due to the dangers of sudden variations in power, that if an inexperienced pilot suffers partial loss of power after take-off, they should shut the engine down and land as if they had experienced full engine failure.

CAA CAP 778 – Policy and guidance for the design and operation of departure procedures, chapter 2 Para 2.1 states that:

*'An omnidirectional departure procedure is designed on the basis that an aircraft maintains runway direction to a minimum height of 500 feet above aerodrome level*

*before commencing a turn. The 500 feet is a UK safety requirement and supersedes the ICAO minimum permissible turn height of 394 feet unless required for obstacle avoidance.'*

## **In conclusion**

In terms of the airflow over the wings, the safety risks associated with stalls and spins together with the height needed to successfully recover from such eventualities provide a strong argument that low-level manoeuvres of this nature should be restricted to emergency only

In gliding the BGA recommend a 300 feet minimum turn height for landing and have confirmed that it is also best practice for aerotows though not documented

In power flying most flying schools teach straight and level flight to 500 feet above ground level

The CAA CAP 778 guidance is to maintain runway direction to a minimum height of 500 feet above aerodrome level

Finally, whilst not specifically part of the ExA question, the proposed route cuts through the EFATO splay of both runways 26 and 33 as shown in previous submissions. This means that in the event of any emergency requiring a forced landing, that landing will be compromised by the presence of the pylons with potentially fatal results

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