

Norwich to Tilbury EN020027

Interested Party Reference Number [REDACTED]

Final submission - deadline 8 Tuesday 4 August

Summary

This representation to the ExA is submitted by [REDACTED] on behalf of the Norfolk Gliding Club (NGC), the owners and operators of Tibenham Airfield, to reiterate and emphasise the aviation safety risks and other adverse impacts to their airfield that would result from the proximity of the proposed pylon line and compliment the previously documented Written Representation [REP1-294]

As with [REP1-294] this representation only considers the 11km section of the proposed pylon line that traverses the airfield's 5km safeguarding zone. It makes reference to the aviation safety risks and adverse impacts that would affect both the safe operation of the airfield and its longer-term financial viability.

From the inception of the project advice and guidance from the Civil Aviation Authority (CAA), the General Aviation Awareness Council (GAAC) and others have continually stressed the need to respond to the aviation safety issues but the assessment of the Applicants aviation consultants has until recently been one of no risk therefore no need of mitigation. Whilst they now acknowledge the potential for fatalities the Applicant's view is that the project is too far advanced to make design-led changes

Within the draft SoCG (which NGC refused agree to or sign) the Applicant makes unsubstantiated claims with respect to EN-1 and NPPF compliance. These are examined and refuted by NGC, showing that the Applicant failed to follow planning procedural guidelines from the first report in April 2022. Had the Applicant collaborated with NGC (as required by EN-1) from that date then many, if not all, of the issues would have been resolved in the first years of the project

Despite that advice and guidance in relation to aviation safety provided by the CAA and other aviation bodies, we find the statement by the Applicant's aviation consultants that they had advised that such guidance should be ignored questionable. Their further claim of compliance with CAP 1059 in respect of risk tolerability is examined together with the salient comments in the latest CAA publication, CAP 3270 which considers the safety risks associated with partial power loss in single engine aircraft.

Following the publication of the draft SoCG and Airfield Impact Assessment (AIA) in mid-2025 and our response, we found that some of our comments were deleted by the Applicant suggesting they were 'not appropriate' or 'matters for discussion' and requesting a date for another consultation. In an attempt to resolve this matter, we pointed out that it was impossible to identify any common ground if we were unaware of the basis on which planning and aviation safety advice was being ignored. The information the Applicant agreed to provide and subsequently chose to withhold is reproduced. The information continues to be withheld

As noted earlier, NGC refused to agree to and sign either the SoCG or AIA. Reference is made to the various points under discussion and some of the chronology entries to support that decision.

We are aware of two planning applications, one an LPA application and the other a DCO application, where EFATO risks played an important part in the Inspectorates decision process

The progress of this project is concluded as a combination of

- A failure to follow national procedural guidelines on planning applications of this nature
- A failure to engage with NGC from the project's inception
- A continual (until recently) refusal to accept that the aviation safety risks were real
- A lack of any meaningful engagement until 2025 when it was announced that the project was too far advanced for design-led mitigation on their part and runway closure or a compromise of CAA promulgated safety standards were the only remaining options

Introduction

For NGC the issue with respect to the proposed Norfolk to Tilbury pylons has always been and continues to be one of aviation safety. This submission addresses that section of the

project that crosses our 5km safeguarding zone, the Applicant's somewhat sporadic engagement with us and a reluctance to accept our concerns in a meaningful way

In addition, when it becomes a matter of aviation expertise and safety, either in general terms or in site specific terms, where do the Civil Aviation Authority's long-established policies and advice rank when compared to the cursory assessment of Alan Statford and Associates.

Until recently the Applicant had always maintained that there would be no aviation safety risk and therefore no requirement for mitigation. Their viewpoint has now changed in that they have recognised and confirmed that there are circumstances in which aircraft could collide with the cables resulting in fatalities, but claim that the project is now too far advanced for design-led mitigation and the airfield must make operational changes by closing runways

By adopting this approach, the Applicant has created a situation whereby approval of the currently proposed alignment would be contrary to national planning guidelines, contrary to superior advice and guidance provided over the last four years and detrimental to general aviation where runways will need to be closed due to matters of public safety

This somewhat cavalier attitude was reiterated by the Applicant at the ISH 4 on Thursday June 25 when suggesting that we close part of the airfield contrary to those planning guidelines and this serves to demonstrate the casual way in which National Grid have dealt with the issue since the project's inception some four years ago

This submission addresses the issues of

- The nature of the aviation safety risks at Tibenham

- A failure by the Applicant to comply with Planning Guidelines

- The decision by the Applicant to withhold previously agreed pertinent information preventing a meaningful development of the SoCG and Airfield Impact Assessment (AIA)

- The recommendation by the Applicant's aviation consultants that advice and guidance from authoritative national aviation and regulatory bodies, who possess far greater knowledge should be ignored

- The major points of disagreement within the draft SoCG and AIA which we have refused to accept or sign

1. Aviation safety risks at Tibenham

In our Written Representation [Rep1-294] we identified the nature of the aviation risks at Tibenham and how the close proximity of the pylons would adversely affect aviation safety and the operational use of runways 26 and 33

Unlike most airfields the problem at Tibenham is compounded by the presence of a second airfield, Priory Farm, with whom we currently have deconfliction agreements that would be impossible to maintain if the project as proposed were to be approved

In summary and in no particular order, these concerns can be categorised as

- Engine Failure After Take Off (EFATO) and similar scenarios involving both powered aircraft and aerotows

- Aerotow launches

- Gliding competition finishers

- Returning cross-country gliders

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

- Potential collision risk with drones and helicopters servicing the pylons

- Loss of amenity, recreational and sport activity and financial implications

2. Compliance with Planning Guidelines

2.1 EN-1, paragraph 5.5.5

At the inception of the project the current version of EN – 1 paragraph 5.5.5 stated that

*‘It is essential that new energy infrastructure is **developed collaboratively** alongside aerodromes, aircraft, air systems and airspace so that safety, operations and capabilities are **not adversely affected** by new energy infrastructure’*

The two salient points within that being ‘developed collaboratively’ and ‘not adversely affected’

In their latest published draft SoCG for NGC, [REP4-249] section 3 paragraph 7.1 claims that they comply with NPS EN-1

Taking these two points in turn

Developed collaboratively

Collaboration – Can be defined as

‘Working together as equals to co-create a solution’

In this scenario our interpretation would have involved the Applicant meeting with NGC, discussing the broad requirements, reviewing the aviation safety issues, identifying the design issues and their limitations and reaching a consensus view. **There was no collaboration with NGC prior to publication of the proposed route**

The Applicant made no attempt to engage with NGC prior to 2023 despite their claim of consultation in 2022. The General Aviation Awareness Council (GAAC) did write in June of 2022 stressing the need to engage with NGC which would have enabled some collaboration in those early design stages but no action was taken until 12 months later

The first meeting with NGC was in the summer of 2023 as part of the round of non-statutory consultations in which we were told that the route had been determined as they (National Grid) considered there were no aviation safety issues and our only option was to raise objections – **How can that be construed as collaboration?**

This attitude was repeated a year later at the statutory consultation of 2024 when their aviation consultant even suggested that we ignore the Air Navigation Order – **again, how can that be construed as collaboration or professional assessment?**

Twelve months after that at the consultation of 2025 we were told that changes to the route were not possible and any mitigation would have to come from NGC despite the guidelines in EN – 1 and NPPF para 200

At no time has there been any engagement that could be considered as collaboration and what there has been can be summarised as

We (National Grid) are going to build a new overhead power line close to your airfield and you (Norfolk Gliding Club) must make operational changes to accommodate that

Which was emphasised by the Applicant’s aviation consultant at the combined BGA/NGC consultation when asked if, since this project was an

NSIP he appeared to be attempting to ride roughshod over any objection his reply was that it is and he is

Therefore, in terms of compliance with EN-1 and collaborative development, the Applicant fails

Adversely affected

Adversely affected – Can be defined as

‘Experiencing a negative, harmful or unfavourable impact and describes a situation where an entity (NGC) has been damaged or worsened by an outside factor (the pylon project)’

During the 2023 consultation many objections were raised and have continued to be referred to by various professional aviation bodies in the intervening years. However the approach taken by the Applicant has until recently always been that there are no aviation safety risks associated with the proposed route alignment and therefore no requirement for mitigation

It is only in the last few months after the commencement of the ExA examination that in a recent submission concerning the risks involved with EFATO type incidents the Applicant agreed that

‘There is the possibility of a forced landing before the OHL or gliding over to land beyond’

Completely ignoring those emergencies where they were too high to land before and too low to glide over the line but in their response [REP4-302] table 2.2 Item 5 (Aviation Safety), 5.1 Aviation Discussion, corrected that by confirming that

‘The Applicant accepts that there is a period in the middle where hitting the line is a possibility’

Which is something of an understatement since not only is it a possibility, it is virtually an inevitability due to the hazardous nature of low-level manoeuvring. The outcome of such a collision would be either be fatalities or serious life changing injuries both of which I have witnessed during my 50 years of flying

The recently published CAP 3270 by the CAA providing guidance for partial power loss in single engine piston aircraft (see Appendix B) is also referred to in section 3 which expands on the risks associated with emergency forced landings

Therefore, in terms of compliance with EN-1 and adverse effects, the Applicant fails

2.2 EN-1, paragraph 4.2.15

Paragraph 4.2.15 makes reference to

'The exception to the presumption of consent are residual impacts onshore and offshore which present an unacceptable risk to, or unacceptable interference with human health and public safety'

In the response to the ISH4 transcripts it was noted that the Applicant appeared confused when addressing the matter of aviation and public safety as detailed in paragraph 4.2.15 of EN-1, quoting the chicken and egg problem and the responsibilities of the aerodrome operator yet in reality it is relatively a straightforward matter

As far as the aerodrome operator is concerned the CAA guidance confirms

'The matter of public safety is one for the aerodrome operator and that insofar as operations are alleged by an operator to be unsafe then they will not happen and the operator will cease that element of the operation'

And, whilst we were preparing the NGC safeguarding plan, the CAA AAT advised that what might be considered a safety risk by one person, might not by another and qualified that by reference to UK Regulation 2018/1139 which in summary states that

'Only the aerodrome operator holds expert opinion as to safety when it comes to the question of proposed obstacles around their airfield'.

As the aerodrome operator, NGC confirms that current operations (ie without the proposed overhead line) with respect to runways 26 and 33 can continue without the question of public safety being an issue and within those CAA guidelines

The Applicant meanwhile is seeking to erect a 200ft electrified wall across the ends of these two runways and makes reference to the "chicken and egg problem"

But the "chicken and egg problem" is defined as

'a classic paradox of circular causality where it is impossible to determine which of two interrelated events caused the other'

There is no such dilemma here since as confirmed above, there is no public safety issue at present

However, if constructed as currently configured, that 200ft obstacle would form an unacceptable aviation safety risk to operations on both runways which has repeatedly been identified by ourselves as the aerodrome operator, the CAA, the BGA and other highly experienced and regarded aviation bodies such as Eddowes Aviation Safety Consultants

Furthermore, as noted above, the Applicant's aviation consultants, in their response [REP4-302] table 2.2 Item 5 (Aviation Safety), 5.1 Aviation Discussion, stated when responding to the possibility of Engine Failure After Take Off (EFATO) and similar incidents that

'The Applicant accepts that there is a period in the middle where hitting the line is a possibility'

Such a collision is frequently fatal or results in life changing injuries

Therefore, if this project were to go ahead as proposed, in order to continue safe operations, the aerodrome operator would have no option but to respond to the new adverse impact caused by the OHL and close those runways even though as the 'agent of change', NPPF para 200 identifies the Applicant as having responsibility for mitigation in these circumstances

The Applicant continued with

'So that there's no risk associated, they'd have to close to that extent. So in Tibenham for example, there would be two runways which they say would be unsafe. We disagree and we're working on solutions'

Which would seem to highlight a problem within the Applicant's team where their aviation consultant has already confirmed that there will be an increased safety risk (see above) creating an adverse impact which can only be resolved by the Applicant accepting their 'Agent of Change' responsibilities and proposing design-led mitigation

Yet again we have another example that had the Applicant followed procedure and worked collaboratively with NGC at the inception of the project as required by EN-1 and prompted by GAAC then these issues would have been resolved before the statutory consultation stage

However, we believe their failure to do so allied to the proximity to the airfield of the proposed project and the potential level of aviation safety risk qualifies as an exception to the presumption of consent

2.3 EN-1, Conclusion

In conclusion, since

The Applicant failed to collaborate with aviation stakeholders at the Project's inception

The Applicant failed to consult in a meaningful way with regard to adverse effects which were denied until recently

The Applicant now admits that hitting the line in the event of an EFATO incident could happen with potentially fatal results

How can the Applicant claim compliance with EN-1?

In the 'Deadline for Resolution' column of the draft SoCG referred to above when considering their claim to be EN-1 compliant the Applicant has written

'Considered unlikely to resolve bilaterally. For the Examining Authority to assess'.

We do not accept that statement since it emphasises **the denial by the Applicant of their responsibility with respect to aviation safety** as exhibited by them throughout the project.

The Project **does not comply** with EN-1 as claimed and the Applicant's refusal to modify the wording is one of the reasons that resulted in NGC's decision not to sign the SoCG

2.4 NPPF paragraph 200

Paragraph 200 of the NPPF states that

*'Planning policies and decisions should ensure that new development can be **integrated effectively** with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities **should not have unreasonable restrictions placed on them** as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, **the applicant (or 'agent of change')** should be required to **provide suitable mitigation** before the development has been completed'.*

In this case there are three salient points, 'integrated effectively', 'unreasonable restrictions' and 'agent of change'

As with EN-1, in their latest draft SoCG for NGC, [REP4-249] section 3 paragraph 7.1 claims compliance with NPPF paragraph 200

Taking these three points in turn

Integrated effectively

As explained above in reference to EN-1 paragraph 5.5.5, the proposed route alignment cannot be integrated effectively since, if unchanged, it compromises aviation safety contrary to EN-1 and would force mitigation by NGC with the closure of two runways and the corresponding adverse impact on operations at the airfield

Unreasonable restrictions

Forcing the closure of two of the six asphalt runways on a well-established airfield especially since the whole problem could have been avoided at the outset by collaboration constitutes unreasonable restrictions

It can still be avoided by the Applicant accepting their 'Agent of Change' responsibilities

Agent of change and suitable mitigation

A reference in the ExA ExQ2 question was made to

'The matter of public safety is one for the aerodrome operator and that insofar as operations are alleged by an operator to be unsafe then they will not happen and the operator will cease that element of the operation'

The primary legislation governing aviation safety and aircraft operations in UK airspace is the Air Navigation Order 2016 (ANO 2016). It is enforced by the CAA and covers all non-EU regulated aviation matters to ensure high standards of airworthiness, crew licensing and safe flight operations

It is a wide-ranging statutory instrument that dictates the legal requirements for flying safely in the UK within key areas such as Pilot and crew licensing, Airworthiness, Operational Directives and Rules of the Air

It establishes strict rules to ensure passenger and public safety such as article 241 which states

'It is an offence to recklessly or negligently cause or permit an aircraft to endanger any person or property'

It has been suggested by an NGC club member that the Applicant could be considered negligent contrary to the ANO 2016 by failing to properly evaluate the aviation safety hazards and propose suitable mitigation in the form of re-alignment or undergrounding

However as noted above, whilst we were preparing the NGC safeguarding plan, the CAA advised that what might be considered a safety risk by one person, might not by another and qualified that by reference to UK Regulation 2018/1139 which in summary states that

'Only the aerodrome operator holds expert opinion as to safety when it comes to the question of proposed obstacles around their airfield'.

NGC, as operators of Tibenham Airfield consider the proximity of the pylons to be a significant aviation safety risk

As the ExA will be aware from the various submissions received from other aviation bodies in addition to the CAA such as the GAAC, the BGA and [REDACTED] [REDACTED]s of Eddowes Aviation Safety Ltd, that view is echoed many times

As noted above, even the Applicant in a recent submission concerning the risks involved with EFATO type incidents and the possibility of a forced landing before the OHL or gliding over to land beyond states that

'The Applicant accepts that there is a period in the middle where hitting the line is a possibility'

In view of this if the OHL were to be constructed as proposed, NGC, as the Airfield Operator, would have no choice other than to close the two runways concerned with the adverse impact on the airfield as referred to in EN-1

As noted in a previous response, it is in this context that we believe the NPPF paragraph 200 is relevant and that forcing the closure of two runways on a well-established airfield represents a failure to 'integrate effectively', places 'unreasonable restrictions' on the airfield and places a responsibility on the Applicant to provide suitable mitigation, not the Airfield Operator.

Had the Applicant followed planning procedure and guidelines in 2022 by collaborating with NGC in the initial route development when they identified the airfield as a safety risk in their initial route planning the whole issue could have been avoided at the outset.

This intransigence on the part of the Applicant and their advisors has created a situation where they are attempting to coerce NGC into compromising their aviation safety standards as promulgated by the CAA and BGA to resolve a problem which is of their own making

3. Compliance with established aviation safety guidelines

The role of the CAA

The terms of reference for the UK CAA are established primarily through the Civil Aviation Act 1982 and subsequent legislative updates. Its mandate is to act as the UK's independent specialist aviation, airspace and spaceflight regulator focusing on safety, security, consumer rights and economic regulation

One of the key core functions identified in the CAA's framework includes

Aviation safety – Regulating and enforcing safety standards for airlines, airports and pilots, as well as managing aviation security protocols

The CAA Airfield Advisory Team

In 2021 the CAA established the Airfield Advisory Team (AAT) to support general aviation airfields facing operational, economic and planning pressures and advise developers on how infrastructure projects such as this might impact airfield safety and viability

In early 2025, following a Department for Transport directive the CAA disbanded the AAT and ongoing airfield development, safety and planning concerns were transitioned by them to the Combined Aerodrome Safeguarding Team (CAST)

The CAA have confirmed that the advice and guidance given by AAT in their name is still valid as though it were given by the CAA today.

As airfield operators we suspected that ASA chose to ignore the specialist knowledge that we 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

Advice and guidance from the CAA AAT

Of particular relevance to NGC is a statement within CAP 793

where flying training is taking place additional safety margins should be considered

In March 20th 2025 the CAA AAT following up on previous correspondence wrote to the Applicant advising

‘From our earliest engagement, we have provided signal that when considering proposed power line routing, it is not the aircraft performance envelope that is the limiting factor. Therefore, any intimation that a specific type can manoeuvre to avoid such vertical obstructions should be disregarded’

Yet only a few months after receipt in 2025 the Applicant published their Airfield Impact Assessment that ignored that advice completely and concluded that

‘An aerotow combination would have sufficient room to manoeuvre away from the OHL after take-off’

Further within that email. (March 20th 2025) the CAA AAT stated that

*‘To some extent, the impacts to Tibenham and Priory farm are interlinked and complex, owing to their close proximity to each other. Tibenham is an important gliding site. **I was concerned by suggestions that glider tow aircraft had the performance to climb clear of the proposed powerline infrastructure. Indeed, this suggestion harked back to an earlier time in these discussions when aircraft performance was cited as the cure to any perceived obstacle issue that was identified, as referred to earlier. The reality is that the performance of both glider tow aircraft and gliders, are variable and based on many factors including meteorological conditions such as wind vectors, air temperature and air pressure, gross weight of tow aircraft including pilot and of course the glider and pilot which is being towed’***

Added to which the BGA rule on low level manoeuvres is that

Turns should not be initiated below 300ft agl

Despite this and negative comments from other experienced aviation professionals with regard to advice and guidance the Applicant has continued to persevere. Both Tibenham and Priory Farm airfields have refused to accept their respective airfield impact assessments

The conclusions of the assessment carried out by Eddowes Aviation Safety Ltd are shown in Appendix A

Risk Tolerability Matrix

In [REP2-290], the Applicant drew the ExA's attention to CAP 1059 to which we responded in our submission [REP3-128] referencing their paragraphs 7 and 8 (Aviation safety risks).

The CAA CAP 1059 risk tolerability matrix compares the two factors of an aviation risk hazard (likelihood of occurrence and severity of consequence) to determine the recommended action to be taken to reduce the risk to as low as reasonably practicable (often referred to as ALARP)

In terms of the severity of consequence the CAA identifies five levels of risk

Catastrophic – Results in an accident, death or equipment destroyed

Hazardous – Serious injury or major equipment damage

Major – Serious incident or injury

Minor – Results in a minor incident

Negligible – Nuisance of little consequence

In terms of the likelihood of occurrence, rather than attempt to determine a value based on statistics, the CAA guidelines placed the likelihood into one of five categories

Frequent – Likely to occur many times (has occurred frequently)

Occasional – Likely to occur sometimes (has occurred infrequently)

Remote – Unlikely to occur but possible (has occurred rarely)

Improbable – Very unlikely to occur (not known to have occurred)

Extremely improbable – Almost inconceivable that the event will occur

As evidence to the severity of consequence, in my 50 years of flying I have twice witnessed an aircraft colliding with cables. Both aircraft were damaged beyond repair and written off and of the occupants there were two fatalities and a third with life changing injuries

Using the Risk Severity table in CAP 1059, I would view the Aviation definition of risk severity as 'Catastrophic'

The assessment of Risk Likelihood is somewhat subjective and the available statistics described above do little to help clarify matters. Furthermore, the meaning attributed to each of the five categories is somewhat general. However, if we assume that the likelihood would fall somewhere between 'Occasional' (Likely to

occur sometimes (has occurred infrequently)) and 'Remote' (Unlikely to occur but possible (has occurred rarely)) then we are able to apply this to the matrix

We applied the EFATO scenario to this Risk Tolerability Matrix with the following results

Risk severity classification – Catastrophic

Risk likelihood classification – Remote to Occasional

Risk conclusion – Unacceptable

Which within the guidelines of CAP 1059 means that

The risk is unacceptable and major mitigation measures are required to reduce the level of risk to as low as reasonably practicable

Within their response in [REP2-290]

'The Applicant strongly agrees that the significance of any risk of the Project as a hazard to aviation is of fundamental importance to establishing whether the risk can be accepted, or if mitigation is required'

But then, quoting CAP 1059, suggests

'The risk likelihood is low and could be accepted subject to review and mitigation if appropriate'

However, in order for the Applicant's claim that the risk likelihood is low and that it "could be accepted" the likelihood would have to fall into the category,

'Improbable, very unlikely to occur (not known to have occurred)'.

Whilst my own experience shows that the risk severity classification of 'catastrophic' is justified, NGC pilots identified three EFATO type incidents in the last twelve months which I believe justifies the 'Remote to Occasional' classification of the risk likelihood contrary to the Applicant's views

The CAA recognise the aerodrome operator as "having expert opinion of the safety of the airfield with respect to potential new obstacles". As such we have a duty of care to all of our users and the Risk Matrix provides a useful tool to determine the tolerability of that risk which as shown above is

The risk is unacceptable and major mitigation measures are required to reduce the level of risk to as low as reasonably practicable

In conclusion therefore how does

- The decision to ignore CAA AAT guidelines

- A failure to reach a satisfactory conclusion within the Risk Tolerability Matrix
- The failure to meet the requirement of EN-1 to ensure that safety, operations and capabilities are not adversely affected

Justify not proposing design-led mitigation measures to resolve the issue?

With respect to the proximity of the proposed route to Tibenham and Priory Farm this would involve the overhead line being realigned to outside our 5km safeguarding zone or undergrounded whilst passing through the zone

Partial Power Loss

In previous submissions by the Applicant, the BGA, [REDACTED] and ourselves, attention was drawn to the Australian study

([REDACTED]) which found that

“The data, however, shows that during and after take-off, a partial power loss is three times more likely in today’s light single-engine aircraft than a complete engine failure. Furthermore, there have been nine fatal accidents from 2000 to 2010 as a result of a response to a partial power loss compared with no fatal accidents where the engine failed completely.”

In response to this issue the CAA has recently published CAP 3270, Partial Power Loss – Guidance for Single Engine Piston Aircraft. The full text of the document is reproduced in Appendix B but some of the salient points are

What is a partial power loss

‘A partial engine power loss occurs when the engine continues to deliver thrust, but at a level below that commanded. Unlike a complete engine failure, the engine does not simply stop producing power—it performs unpredictably, delivering some thrust but without assurance that it will remain stable’

What action to take during or just after take-off

In the first few seconds after take-off, the safest course of action is to lower the nose to ensure that speed is maintained. Take the option to land within the airfield boundary, if available, and close the throttle to maximize available landing distance.

Turnback options in partial power loss events are extremely hazardous and should only be considered if significant height and sufficient power remain to

maintain height without concern. It is nearly always safer to limit low level manoeuvring and land ahead.

Above all, maintaining a safe speed and limiting bank angle to no more than moderate is key to avoiding a stall/spin accident. Reaching the ground with the wings level and the aircraft aligned with the terrain, rather than after a stall or spin, can be the critical factor in the outcome.

And summarise their guidance with

Partial engine power loss presents a complex and hazardous scenario, particularly at low altitude, where uncertainty over remaining engine performance can quickly erode safety margins.

When a partial power loss does occur, take prompt action to maintain control of the aircraft, ensuring safe airspeed and then select a suitable landing area with minimum low-level manoeuvring.

Partial power loss at low height should normally be treated as a full power failure, avoiding attempts to stretch the glide, troubleshoot excessively, or trying to turn back to the airfield at low level

Which of course is contradicted by the Applicant's aviation consultant's recommendation within the AIA that

'An aerotow combination would have sufficient room to manoeuvre away from the OHL after take-off'

4. The withholding of information

In the first half of 2025, draft versions of the SoCG and AIA were provided by the Applicant

Both documents were reviewed, annotated with our views as to the errors, omissions and concerns then returned to the Applicant.

However, when the revised version was published some of our comments had been deleted by the Applicant suggesting they were 'not appropriate' or 'matters for discussion' and requesting a date for another consultation

In an attempt to resolve the matter, it was pointed out that it was impossible to identify any common ground if we were unaware of the basis on which planning and aviation safety advice was being ignored

One example of this is described in section 2.1 above where the Applicant was claiming compliance with EN-1 paragraph 5.5.5

A second is the AIA itself where the CAA had written to the Applicant advising that the approach was flawed and should not be used

Therefore, prior to the consultation of August 2025 (which was a joint meeting with Tibenham and Priory Farm airfields), the Applicant agreed an agenda which involved the supply by them of a number of statements relative to route development, EFATO risk mitigation and detailed costings

For clarity the agreed documents were

Item 1 – Route Development Rationale

National Grid to provide a documented statement (with copies to both Norfolk Gliding Club and Priory Farm Airfield) explaining why the expert guidance from the Civil Aviation Authority (CAA), British Gliding Association (BGA), General Aviation Awareness Council (GAAC), and others was disregarded in favour of the less experienced advice of ASA when developing the proposed pylon route near Tibenham.

Item 2 – Aviation Safety: EFATO and Aborted Aerotow Risk Mitigation

Engine failure after take-off (EFATO) and the danger of aborted aerotows represent the most serious aviation safety risk to our pilots given the proposed alignments proximity to both airfields. As the airfields cannot be relocated, we require National Grid, as the 'Agent of Change', to present mitigation proposals to address this hazard. As stated previously, our position is that design-led mitigation should take the form of:

- A re-alignment of the route to beyond the Tibenham 5 km safeguarding zone, or
- Undergrounding of the route within the safeguarding zone.

Item 3 – Cost Comparisons

We request that National Grid provide the following comparable cost information for each of the route configurations:

- The cost of the current proposed route segment through the 5 km safeguarding zone.

- The cost of re-aligning the route outside the 5 km safeguarding zone.
- The cost of undergrounding the route as it passes through the 5 km safeguarding zone.
- The overall cost of the full Norwich to Tilbury project.

At the consultation the Applicant announced that they were withholding the information and after a general discussion around those subjects the meeting was adjourned to allow the Applicant time to reconsider their decision

Since August 2025 we have repeatedly requested the provision of this withheld information in order to progress the development of the SoCG and AIA but without success

In [REP2-029] the Applicant states that they do not consider the information as being withheld. Our response to the submission was that if so, and as neither airfield has a record of having received those agreed documents in the form requested, why can duplicate copies not be provided as a matter of urgency? The Applicant has not responded to this question

In reading through ExQ1 I note the ExA's comment at SS1.8 that the Applicant's response (REP2-029) appears to not fully deal with Norfolk Gliding Club's concerns. I would confirm that they still do not and without that information we have been unable to respond meaningfully to development of the SoCG other than to agree that matters remain not agreed and certainly not currently under discussion.

Subsequently, in a joint meeting with the Applicant and the BGA on June 29th I referred to the CAA AAT letter of March 2025. [REDACTED] (for the Applicant) became somewhat agitated and claimed that the answer was provided at the August consultation. But in doing so seemed to forget that that consultation was adjourned because the agreed information (of which an answer to this issue was included) was withheld by them and is still outstanding

When asked for a specific answer, [REDACTED] (ASA) confirmed that they had advised the Applicant to ignore CAA advice and guidance but did not provide any explanation as to why

The whole issue of the withheld information is still outstanding and forms the basis on which Norfolk Gliding Club refuse to sign and accept the SoCG or AIA

5. Non-acceptance of the SoCG and AIA

Our understanding of the Statement of Common Ground is that it should be

'A written document that outlines the facts, agreements and disagreements between two or more parties'

However, when presented with the first draft version it was obvious that the Applicant had included statements that were blatantly untrue and our attempts to correct them were met with the response that “it was for the ExA to decide”. Even our addition of a comment indicating that no such consultation meeting took place was deleted on the basis that “it was for the ExA to decide”.

One of our club members reading through this early draft commented that it was as though National Grid were attempting to rewrite history to cover up for their failure to collaborate and engage in a meaningful way throughout the four years of this project

Review of the SoCG version C submitted 21 July 2026

Section 3, reference 7.1

‘The Stakeholder position is that the Project is contrary to EN-1 as aviation operations will be adversely impacted. The Stakeholder expects the Applicant to fulfil ‘Agent of Change’ responsibilities for mitigation in accordance with the NPPF. The Applicant’s position is that its approach is consistent with the requirements of EN-1 and EN-5 as the primary determining policies for the application, as well as the NPPF and relevant aviation sector-specific guidance.’

Our views with respect to EN-1 and the NPPF are detailed in section 2 of this submission which conclude that the Project **does not comply** with EN-1 as claimed

The Applicant failed to properly consider the aviation safety risks from the inception of the project in 2022 as detailed in those paragraphs

And within the column headed ‘Deadline for Resolution’

‘Considered unlikely to resolve bilaterally. For the Examining Authority to assess’.

Which we do not accept since it emphasises the denial by the Applicant of their responsibility with respect to aviation safety as exhibited by them throughout the project where they have changed from a “no aviation risk” approach to “potential for fatalities but too late in the Project to make changes”

Section 3, reference 7.2

The Stakeholder position is that consultation has not been meaningful as concerns raised have not resulted in changes to the Project design, and Project information has been withheld. The Applicant position is

that consultation undertaken was fully compliant with legislative requirements and the Statement of Community Consultation. No information has been withheld. The parties differ in their interpretation of consultation requirements with regards to the need for risk-based justification for design changes to be implemented in response to stakeholder feedback.

Many of the concerns raised were based on advice and guidance from the CAA and other aviation bodies together with our knowledge of the airfield. At the BGA/NGC consultation at the end of June 2026 the Applicant's aviation consultants confirmed that they had advised that this advice and guidance should be ignored yet did not and have not provided a valid justification for their action

Our position with respect to the withheld information is detailed in section 4 of this submission. It was withheld from the consultation of August 2025 and has not been supplied since

Since the Applicant has until recently maintained that there would be no aviation safety risk and now acknowledges the possibility of fatalities it is difficult to understand how design-led changes cannot now be implemented

Section 3, reference 7.3

The Stakeholder position is that the Applicant assessment approach is inappropriate as it is not derived from the aerodrome safeguarding zone and is overly focused on aircraft performance. The Applicant position is that safeguarding is distinct from impact assessment. Its methodology focuses on obstacle clearance and Obstacle Limitation Surface (OLS) infringement amongst other factors and, considering aircraft performance to determine an aircraft's ability to manoeuvre in the presence of the Project and thereby assess the available mitigations available to pilots and the aerodrome operator, as well as any impact the Project has on current and likely future operations. This is in accordance with EN-1 requirements. The Stakeholder position is that gliding operations are not appropriately considered in the impact assessments. The Applicant position is that gliding has been specifically studied and key assessment parameters and assumptions are appropriate and welcomes continued engagement regarding measures used to inform . Assessment conclusions have been validated by modelling undertaken with the British Gliding Association and shared and discussed with the Stakeholder position .

The Applicant was advised by the CAA AAT that the impact assessment methodology was flawed and should not be used yet the Applicant's aviation consultants chose to ignore that advice and proceed with it

Their claim of the aircraft's ability to manoeuvre to avoid collision was also rejected by the CAA AAT

As detailed in section 2 of this submission, we do not accept that the assessment is in accordance with EN-1 requirements

The claim that "gliding has been specifically studied", "assessment conclusions have been validated by modelling undertaken with the BGA and shared and discussed with the Stakeholder" is not true. Discussions were started at the meeting of June 29th but the assessment conclusions have not been shared with NGC

Section 3, reference 7.4

The Stakeholder position is that the Project will adversely impact the safety of gliding operations, specifically for aerotow take-offs, forced landings and competition finishes. The Applicant impact assessment conclusions are that safe operations can continue, including in these circumstances. The Applicant welcomes continued engagement to inform its understanding of Operator risk acceptance thresholds. The Stakeholder and the Applicant agree powered aircraft can take off manoeuvre (including for take-off and landing) with a sufficient safety margin.

The Applicant was advised by the CAA AAT that the impact assessment methodology was flawed and should not be used yet the Applicant's aviation consultants chose to ignore that advice and proceed with it without providing any justification

Aerotow take-offs – Tests carried out in September 2025 showed that there were instances when the combination failed to reach a height that would enable them to clear the proposed line. The Applicant is aware of this but chooses to ignore it

The BGA ruling is that gliders (and therefore aerotows not gaining sufficient height) cannot initiate a turn below 300ft. This was answered at some length in a previous response to an ExA question

Powered aircraft – We agree that in normal circumstances they should be able to take-off with sufficient safety margin but as the Applicant's aviation consultant has now confirmed that in the event of an EFATO type emergency the proximity of the pylons will probably result in a collision with fatal results

Section 3, reference 7.5

The Stakeholder position is that overhead line re-routing outside the safeguarding zone or undergrounding is required to mitigate adverse aviation impacts. The Applicant position is that substantial changes to the Project design are not justified by the assessed aviation impacts. Measures to mitigate residual impacts (including potential changes to operational procedures) have been suggested to the operator Stakeholder for their consideration. The Stakeholder has not engaged with the Applicant further on this matter.

Mitigate adverse aviation impacts – If we consider just one issue, that of EFATO type incidents, as noted above, the Applicant's aviation consultant has now confirmed (after years of saying there would be no risk) that in the event of such an emergency the proximity of the pylons will probably result in a collision with fatal results. There are two ways to mitigate that risk

Close the runways which is contrary to EN-1

Increase the distance from the end of the runways to the pylons

Since we cannot move the runways, the Applicant must move the pylons

This position has been maintained by NGC since the first consultation of 2023. Had the Applicant followed procedure and collaborated with us in 2022 then this problem would have been resolved some months ago. The claim that the project is too far advanced for such changes to be considered is a problem of their own making and constitutes a failure in National Grid's planning process

As the Applicant is fully aware, NGC have repeatedly offered to resume the adjourned consultation of August 2025 once the withheld information, promised for that meeting was supplied. It continues to be withheld

Section 3, reference 7.6

The Stakeholder position is that the proposal will adversely impact the aerodrome's status as a National Significant Area for Sport (SASP) as well as its financial viability. The Applicant position is that assessed socio-economic effects, including business impacts, are not significant given the aviation impact assessments conclude the site can continue to operate safely.

Significant Area for Sport – The risk to NGC’s SASP status has been expressed by both Sport England and the BGA

The Applicant’s position that safe operations can continue are again based on the flawed methodology as identified by the CAA AAT. If the overhead line is built as proposed there will be serious safety risks (as confirmed by the Applicant’s consultant) which can only be mitigated for by the closure of runways contrary to planning guidelines

Section 4

The Planning Act 2008 places duties on National Grid as the DCO applicant to consult with prescribed or affected persons as well as to take account of responses to consultation and publicity. In accordance with these statutory requirements, National Grid has undertaken two non-statutory and one statutory consultation to inform its proposals, together with further targeted consultations.

In respect of Norfolk Gliding Club and Tibenham airfield, there was only one non-statutory consultation in 2023 despite the Applicant’s claim of a second one in 2022.

The so called “targeted consultation” was not as its name implies but just a “Teams” presentation of progress with no opportunity to ask meaningful questions

Section 5

The Overarching National Policy Statement for Energy (EN-1) has effect for the decisions by the Secretary of State on applications for energy developments that are nationally significant under the Planning Act 2008. Amongst other impacts, Section 5.5 recognises that all aerodromes can be affected by new energy development and the need, therefore, for NSIPs to be developed collaboratively alongside aerodromes so that safety, operations and capabilities are not adversely affected. Reciprocally, EN-1 states that it is essential for aerodrome operators to work collaboratively with energy infrastructure developers essential for net zero, recognising the need for the important economic and social benefits of aerodromes to be balanced with the urgent need for new energy developments which bring about a wide range of social, economic and environmental benefits.

NSIPs to be developed collaboratively – see section 2 of this response

So that safety, operations and capabilities are not adversely affected – see section 2 of this response

In accordance with EN-1 requirements, the operator of Tibenham aerodrome (Norfolk Gliding Club) was identified as a priority stakeholder for engagement in relation to aviation impact considerations.

But that engagement did not take place until 15 months after the publication of the report after which the route alignment had been decided and we were advised that our only option was operational changes involving the closure of runways

Section 5 - 2022

21 April – 16 June non-statutory consultation on the Preferred Route Corridor graduated swathe

But not with Norfolk Gliding Club at Tibenham airfield despite the implication in the wording.

The Applicant refused to include a comment indicating that NGC were not invited to this consultation despite being identified as a priority stakeholder

13 June written representation from General Aviation Awareness Council (GAAC) on behalf of the Operator raising concerns regarding the proximity of the Project to the aerodrome

But it still took a further 12 months from this letter before and contact was made with NGC

Section 5 – 2023

Development of the 2023 Preferred Draft Alignment, responding to feedback and other studies, as described within the 7.20 2023 - Design Development Report for the Project [APP-358]

But at this stage the preferred draft alignment had been produced prior to any contact with NGC contrary to the planning guidelines requiring collaboration and the need to meet the requirements of EN-1 with regard to adverse aviation impacts

Section 5 – 2024

Development of the 2024 Preferred Draft Alignment, considering feedback and other studies, as described within the 7.21 2024 - Design Development Report for the Project [APP-359]

Limited in terms of time and space in a cramped room within the Tibenham Village Hall when far better facilities were available at the airfield

The Applicant's representatives were unaware of any detail from the 2023 consultation and unable to answer specific questions concerning the proposed route making the whole consultation somewhat pointless

Section 5 - 2025

Development of the proposed Project Alignment prior to DCO submission, considering feedback and other studies

The term "considering feedback" appears quite frequently but when questioned, the Applicant has always been unable to qualify the comment and explain exactly what form that "consideration" took

7 August meeting in-person meeting between National Grid (with ASA) and representatives of Tibenham and Priory Farm aerodromes. Decision to adjourn meeting made by operators. Matters discussed (prior to adjournment) included

Prior to the meeting the Applicant agreed to supply detailed information which would form the basis of the discussion and development of the SoCG and AIA. The detail of those agenda items can be found in section 4 of this submission

The matters discussed referred to by the Applicant were of a general nature to give the Applicant the opportunity to present the agreed detail verbally which they chose not to do and therefore the consultation was adjourned

To date we have repeatedly offered to resume to adjourned consultation after receipt of the withheld information but National Grid have chosen not to take up our offer

Section 5 – 2026

29 June meeting held between National Grid, the Operator and the BGA; agenda included: A Summary of National Grid and BGA discussions to date regarding gliding-specific operational parameters and key assumption

Presentation of ASA modelling incorporating BGA-derived parameters
Discussion of implications of modelling to impact assessment and mitigation
consideration including competition flying The Operator left the meeting part way, refusing to engagement further.

Excluded from these comments is my question in which I referred to the CAA AAT letter of March 2025 as noted in section 4 above which identified the AIA as flawed methodology. I asked when were we going to get an answer from ASA. [REDACTED] (for the Applicant) became somewhat agitated and claimed that the answer was provided at the August consultation. But in doing so seemed to forget that that consultation was adjourned because the agreed information (of which an answer to this issue was included) was withheld by them and is still outstanding

When asked for a specific answer, [REDACTED] (ASA) confirmed that they had advised the Applicant to ignore CAA advice and guidance but did not provide any explanation as to why

When asked if, since this project was an NSIP he appeared to be attempting to ride roughshod over any objection his reply was that it is and he is

With that sort of attitude, I felt that further discussion was pointless

6. EFATO Precedents

The EFATO splay

The CAA guidelines identify that in the event of a low level EFATO type incident and the need for an emergency landing the pilot should continue in a straight line +/- 30° either side of the extended centre line

This would represent a segment in the order of 4.7km² extending from the end of each of the two runways as shown in Appendix C

The proposed proximity of the overhead line reduces that area by nearly 50% to 2.47km² of which 0.49km² is unavailable due to size, shape, housing etc

Both areas include that taken up by Priory Farm airfield

Rufforth Airfield

In his report on the safeguarding of Tibenham airfield, [REDACTED] made reference to an appeal decision by the Inspectorate of a planning application for

buildings close to Rufforth Airfield which has similarities in respect of the removal of land available for forced landings

'From the evidence before me, both the Council's [REDACTED] and appellant's [REDACTED] aviation experts accept that in normal take-off and landing situations, the proposed buildings would have very little effect upon aviation safety.

However, the point of dispute arises over the effect of unforeseen pre-cursor events (UPCE), for example, engine failure after take-off (EFATO), undershoot or bird strike.

Whilst these UPCE are not influenced by the presence of the proposal, the location of the poultry sheds would remove an area of land that could be used for forced landings.

This effectively would lead to a change in the obstacle environment in an area where UPCE may occur, and this could then lead to an increased risk of the forced landing colliding with the proposal, causing serious injury or fatality.

The primary concern for the Council is EFATO'.

London Oxford airport

A similar situation developed at the proposed Botley West Solar Farm (PINS ref EN010147) which would have restricted the land available for emergency landings. In one of the reviews, it was stated that

The Airport is not in objection to the principle of the application. However, it considers that the proximity of the development to the Airport boundary, and the associated risks that emanate from this, should be scrutinised in greater detail and that the design should be amended to remove panels in areas where they may cause a risk to the operation and safety of the Airport.

During the development of their SoCG the Applicant agreed with the airport operator to modify their proposals and remove panels from the areas identified by the airport

Conclusions

In their various responses the Applicant seems to afford little consideration to the aviation operations at Tibenham other than gliding. In section 4 of our written representation [Rep1-294] we identified many of these and in summary those activities include

- Club member gliding and gliding instruction
- Glider trial flights for members of the public and youth groups such as the Scouts
- Power flying by members in their own aircraft
- Power flight training to PPL and beyond
- Motor gliding
- Ballooning with Bucket List and Virgin Balloons
- MOD helicopter refuelling (Chinook)
- Refuel and rearm location for Apache helicopter training
- RC model aircraft flying

Over the course of the last few months, one comment from stakeholders appears to be raised time after time – that the Applicant did not engage in a meaningful way and did not address the concerns but appeared to just dismiss them

In that respect the experience of NGC was no different and is confirmed by the Applicants aviation consultant who in the joint meeting with the BGA stated that

They had advised the Applicant to ignore CAA advice and guidance but did not provide any explanation as to why

There is no evidence to support the Applicants claim that they comply with EN-1 and the NPPF. In fact, all the evidence points to their failure in that respect and having developed the project without compliance and meaningful engagement they are now seeking to gain approval on the basis that it is too late to make the necessary changes where aviation safety concerns are involved

Despite advising the Applicant to ignore CAA advice and guidance their aviation consultant then attempts to distort the CAP 1059 risk tolerability assessment in their favour without any evidence to support their assumptions. As we show, our evidence concludes that

‘The risk is unacceptable and major mitigation measures are required to reduce the level of risk to as low as reasonably practicable’

Whilst making reference to the Australian EFATO study the Applicant’s aviation consultant fails to recognise the dangers associated with partial power loss and the advice and guidance contained within CAP 3270 when claiming that

‘An aerotow combination would have sufficient room to manoeuvre away from the OHL after take-off’

Compared to the CAP 3270 advice and guidance of

Partial power loss at low height should normally be treated as a full power failure, avoiding attempts to stretch the glide, troubleshoot excessively, or trying to turn back to the airfield at low level

The decision to withhold the agreed information that should have been presented by the Applicant at the August 2025 consultation prevented any further meaningful engagement and development of the SoCG and AIA. Since then we have made numerous offers to resume the consultation on receipt of that withheld information but the Applicant has refused to take up those offers

The decision by NGC to not agree and not sign both the SoCG and AIA is supported by the Applicants refusal to acknowledge their failure to comply with EN-1 and the NPPF and within the column headed ‘Deadline for Resolution’

‘Considered unlikely to resolve bilaterally. For the Examining Authority to assess’.

Which we do not accept since it emphasises the denial by the Applicant of their responsibility with respect to aviation safety. This position has been exhibited by them throughout the project where they have changed from a “no aviation risk” approach to “potential for fatalities but too late in the Project to make changes”

Two examples are provided of planning applications where EFATO risks were considered to be contributory to the decision by the Inspectorate. In one case a refusal and in the second a design-led change to remove the obstacle from the forced landing area

Appendix A

Risk Assessment, Eddowes Aviation Safety Ltd

In the absence of any effective response to those concerns and as the application moved towards examination, the NGC commissioned Eddowes Aviation Safety Limited, a specialist aerodrome safety and risk assessment consultancy with specific safeguarding expertise, to advise further on the likely impacts of the current National Grid proposals on operations at Tibenham Airfield.

An initial review by EAS that considered the aviation impact assessment presented by National Grid as part of the Environmental Statement for the project, has found deficiencies in that assessment which was found not to comply with National Grid's own guidance. It confirms that the concerns raised by the NGC are legitimate, in accordance with the supporting statements made by the BGA and the AAT.

The conclusions reached by [REDACTED] are

1 There appears to have been a lack of consideration of aviation as a routing constraint before National Grid announced the preferred route corridor for the proposal to upgrade the Norwich to Tilbury transmission line in 2022. The GAAC promptly raised concerns about the potential impacts of the proposal on Tibenham Airfield in June 2022 which have subsequently been repeated by the NGC, the BGA and the AAT.

2 The consultants subsequently engaged by National Grid to undertake an aviation impact assessment of the proposal have employed a flawed approach. Their assessment does not adequately describe the adverse impacts of the proposal which need to be considered during the examination of the proposal. The current National Grid position that no modification to the route in the vicinity of Tibenham Airfield is required because it was not considered justified on the basis of evidence or assessment of aviation safety impacts is not supported by a proper assessment of its impacts.

3 There are multiple adverse impacts which, cumulatively, amount to a substantial degradation of safety and operability of the airfield.

4 Perhaps the most serious impacts are safety-related, in particular the degradation of safety during a forced landing following engine failure or some other fault condition encountered during take-off. The more general increased collision risk associated with various scenarios is also of some concern.

5 Other significant impacts relate to new operational constraints, in particular the inability to undertake aerotow launches safely to the west from Runway 26 and potentially Runway 33 which may make the airfield unusable in some wind conditions when operations from other runways are not possible due to the wind conditions. The increased minimum heights that would be required to provide adequate clearance margins with respect to the pylons represent further losses of the amenity value of the airfield. These degradations in operability of the runway system at Tibenham are considered by the NGC and BGA to threaten the viability of Tibenham as a future competition venue.

The full report can be found appended to Written Representation, [REP1-256]. As yet I am not aware of any response to this from the Applicant

Appendix B

STAY IN CONTROL. PARTIAL POWER LOSS. UK CAA CAP 3270

Guidance for Single Engine Piston Aircraft

Introduction

A partial engine power loss occurs when the engine continues to deliver thrust, but at a level below that commanded. Unlike a complete engine failure, the engine does not simply stop producing power—it performs unpredictably, delivering some thrust but without assurance that it will remain stable.

A total engine failure is something pilots have been taught for several decades. It is clear, decisive, and—ironically—simpler to handle. However, a partial power loss is something altogether more insidious. To address this hazard, the CAA has now introduced partial power loss training into initial and refresher training.

The complexity of a partial power loss lies in uncertainty. With some power still available, pilots must make effective decisions without knowing how reliable that power is, how long it will last, or whether it will degrade further without warning. This ambiguity can make it difficult to determine the aircraft's true performance capability at a potentially critical phase of flight.

Such scenarios have contributed to serious accidents, particularly when the partial power loss occurs close to the ground. Attempting to continue flight, troubleshoot, or maintain altitude with insufficient or deteriorating power can quickly result in loss of control, often with fatal consequences. Studies indicate that partial power losses occur far more frequently than total power failures.

Despite the statistics, partial power loss events are often underestimated by pilots, who are generally more used to practicing total power failures. Training has historically placed much greater emphasis on total power failures, especially after take-off. As a result, pilots are more likely to have mentally rehearsed that scenario.

Partial power loss, by contrast, is rarely considered in advance. When it happens unexpectedly, the lack of preparation can lead to hesitation, inappropriate decision-making,

and delayed actions. This could lead to a manageable situation escalating into a loss of situational awareness, potentially resulting in a stall and/or spin.

HOW TO MANAGE PARTIAL POWER LOSS IN A SINGLE-ENGINE AIRCRAFT

Pre-flight

A significant proportion of recent partial power loss events that occurred shortly after take-off were preventable.

In many cases, the underlying issues would have been detectable before flight if normal inspection and checking procedures were carried out thoroughly.

Thorough knowledge of the aircraft flight manual or pilot operating handbook, combined with a disciplined approach to walkaround inspections, fuel checks, and engine run-ups, plays a critical role. Monitoring engine indications closely during the early stages of take-off plays a crucial role in identifying developing engine problems.

Investigations frequently trace partial power loss events back to faults in the fuel system, ignition system—including spark plugs—or carburettor icing. These issues often provide warning signs rather than occurring without notice.

- An engine speed reduction during run-up checks when checking magnetos that exceeds the limits specified by the flight manual/pilot operating handbook;
- Failure to achieve an RPM drop and stabilisation following carburettor heat application;
- Static engine rpm at full power that falls below expected or published values;
- Abnormal engine behaviour, such as roughness or changes in sound or vibration, suggesting the engine is not operating normally.

Recognising and acting on these cues before departure can prevent a developing problem from becoming a critical in-flight emergency.

Pre-take-off brief

Before take-off, it is important to consider the possibility of a partial loss of power and decide in advance how you would respond.

Planning for different scenarios—on the take-off roll, during initial climb, and at circuit height—reduces the element of surprise and improves decision-making under pressure.

Remember that using the full runway length instead of making an intersection take-off allows a greater possibility of stopping on the remaining runway or at least within the airfield boundary if an issue occurs.

Especially on shorter runways where performance is critical, consider the point at which you would reject the take-off if a certain speed were not reached and stick to it. One rule of thumb to consider is two-thirds of the take-off speed by one-third of the runway, a visual reference for that point may help ensure decisive action in case of an issue.

Partial power loss during/just after take-off

A partial power loss can present itself in many ways – it may be a rough running engine, it could be surging and falling engine notes, or an engine speed at less than you commanded. In all cases you must maintain control of your aircraft and respond immediately. Taking no action is not an option.

Acceleration along the runway should also be monitored to confirm it is normal.

Accident reports show that, in some cases, symptoms such as rough running, lower than recommended static RPM, or sluggish acceleration were present before rotation, but the take-off was continued, often due to uncertainty about the significance of these indications.

Know your aircraft, if something doesn't seem right and you are still on the runway, in most cases it is safest to reject the take-off. Staying on the ground is more likely to lead to a better outcome, even if it results in a runway excursion.

In the first few seconds after take-off, the safest course of action is to lower the nose to ensure that speed is maintained. Take the option to land within the airfield boundary, if available, and close the throttle to maximize available landing distance.

Only conduct any troubleshooting if there is sufficient time, in most low-level scenarios, there may not be, and diagnosing the cause of the engine problem should never be attempted at the expense of maintaining control of the aircraft.

At low levels where sufficient space within the airfield boundary is unavailable, there may not be time to do anything other than to treat the partial loss in the same way as a full loss of power. Where you cannot land within the airfield boundary, continue flying the aircraft and conduct an off-field landing. Do not rely on the situation improving just because some power may exist, it is generally safer to treat the failure as you would a full engine power loss and remove the uncertainty of the scenario.

Turnback options in partial power loss events are extremely hazardous and should only be considered if significant height and sufficient power remain to maintain height without concern. It is nearly always safer to limit low level manoeuvring and land ahead.

Above all, maintaining a safe speed and limiting bank angle to no more than moderate is key to avoiding a stall/spin accident. Reaching the ground with the wings level and the aircraft aligned with the terrain, rather than after a stall or spin, can be the critical factor in the outcome.

Partial power loss in the circuit

A partial power loss in a circuit where you are unable to maintain height should be treated the same as a full loss of power with a glide approach made towards the airfield or a suitable landing area off-airfield. Choose the most suitable landing option with the best available wind component, avoiding any tailwind component where possible.

Pilots should not attempt to stretch the glide or remain airborne to complete a normal circuit to the runway. In many cases, a controlled touchdown under power-off conditions, even if short of the runway, is preferable to a loss of control resulting from excessive manoeuvring at low height.

Partial power loss in the cruise

With sufficient altitude in the cruise, there will be more time to deal with a partial engine failure, though one should not become complacent that the situation will not further deteriorate.

Know the potential warning signs of a developing partial power loss.

- Engine running rough or vibrating
- Gradual or fluctuating drop in RPM / manifold pressure
- Unexpected decrease in fuel pressure or fuel flow
- Rising or abnormal engine temperatures (CHT / EGT)
- Falling oil pressure or rising oil temperature
- Changes in engine sound (sputtering, uneven firing)

It's worth knowing in advance what engine RPM setting you need to maintain level flight at best glide. Taking an opportunity to practice this exercise with an instructor will really speed up the decision-making process should a real partial power loss scenario occur.

When a partial power loss occurs during the cruise, you should initially set the best glide speed and determine whether enough engine power remains to maintain height and therefore safely divert to the closest usable airfield.

If there is any doubt, then you should choose the closest available safe forced landing area to conduct a forced landing.

If you decide to proceed to another airfield, you should continue to select suitable forced landing areas until such time you can make a glide approach to your diversion airfield. At no point should you be reliant on the engine power to reach a safe outcome, it could fail at any moment.

Don't forget, when able you should make a distress call to the most appropriate agency, especially before you get too low. But always aviate, navigate, communicate!

Summary

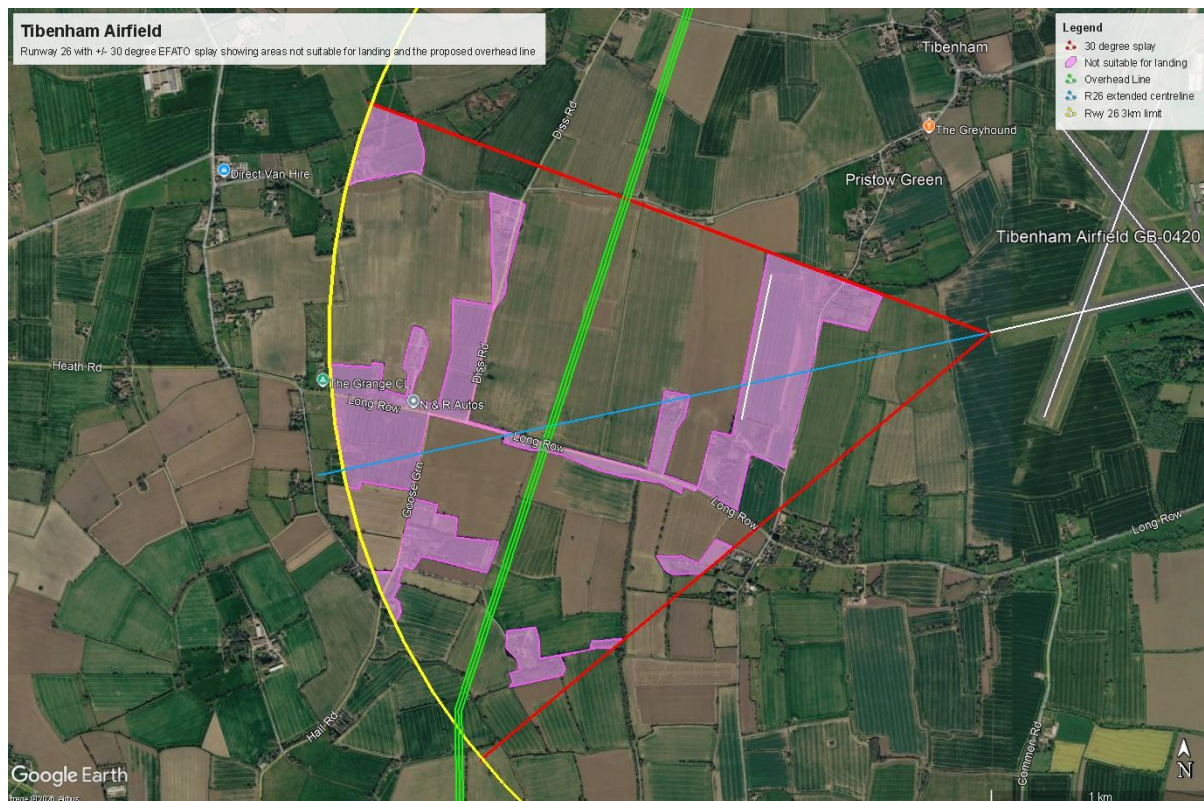
Partial engine power loss presents a complex and hazardous scenario, particularly at low altitude, where uncertainty over remaining engine performance can quickly erode safety margins. Evidence from studies shows that such events occur more frequently than complete engine failures and are often preceded by detectable indications that go unnoticed.

Effective risk mitigation relies on thorough pre-flight and pre-take off checks, pre-take-off briefing, and the early recognition of abnormal engine behaviour. When a partial power loss does occur, take prompt action to maintain control of the aircraft, ensuring safe airspeed and then select a suitable landing area with minimum low-level manoeuvring.

Partial power loss at low height should normally be treated as a full power failure, avoiding attempts to stretch the glide, troubleshoot excessively, or trying to turn back to the airfield at low level. By improving awareness, training, and decision-making around partial power loss, pilots can reduce the likelihood of loss of control and significantly improve the chances of a survivable outcome.

Appendix C

Tibenham and Priory Farm Airfields Runway 26 with the +/- 30° EFATO splay Proposed Overhead line and unsuitable landing areas



The Google Earth image shows Tibenham airfield with the extended centreline of runway 26 (in blue) and the 30° splay limits (in red) extending to 3km curve (in yellow). This EFATO splay area is bisected by the proposed overhead line (in green)

Within the EFATO splay the shaded areas indicate those areas considered unsuitable for a safe forced landing due to their size, housing or vegetation.

In terms of area,

The total splay is 4.71 km²

The area to the east of the overhead line is 2.47 km² (52%)

The area to the west of the overhead line is 2.24 km² (48%)

Excluding the unsuitable land the remaining area is 3.69 km²

The area to the east of the overhead line is 1.98 km² (53%)

The area to the west of the overhead line is 1.71 km² (47%) but of doubtful use as the aircraft would need to be able to clear the OHL first

Of the available area (3.69km^2) therefore only 1.98km^2 would realistically be available provided the emergency happened early in the take-off phase of the flight. If it were slightly later the pilot might not be able to fly over the OHL as previously described.

As an analogy, it is as though there was a shadowed area to the west of the OHL which would be unavailable due to the rate of descent of the aircraft. The exact size of this area is variable since it depends on the type and performance of the aircraft involved

As operators of the airfield, NGC consider this loss of forced landing land to be unacceptable in terms of safe operations