Australian Government
Civil Aviation Safety Authority

SUMMARY OF CONSULTATION

Draft Multi-Part AC 139.E-01 and AC 175.E-02 - Version 2.0 - Objects and structures that affect aviation safety

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Acknowledgement of Country

The Civil Aviation Safety Authority (CASA) respectfully acknowledges the Traditional Custodians of the lands on which our offices are located and their continuing connection to land, water and community, and pays respect to Elders past, present and emerging.

Artwork: James Baban.

1 Overview

The purpose of the consultation on *Draft Multi-Part Advisory Circular (AC) 139.E-01 and AC 175.E-02 - Version 2.0 - Objects and structures that affect aviation safety*, was to provide guidance to those authorities and persons involved in the planning, approval, erection, extension or dismantling of objects and structures or sources of hazardous plumes, so that they may understand the vital nature of the information they provide in relation to the impact on safety of aircraft operations.

This Multi-Part AC is an amalgamation of two existing ACs:

- AC 139.E-01 v2.0 - Reporting of tall objects and structures
- AC 139.E-05 v1.1 - Obstacles (including wind farms) outside the vicinity of a CASA certified aerodrome.

On 3 September 2025, CASA published the draft Multi-Part AC for consultation with guidance on:

- risks to aviation
- reporting of objects and structures
- assessment of hazards
- hazard mitigation; and reporting of objects and structures.

The consultation closed on 1 October 2025, with a significant number of responses received representing many diverse views.

Contents

2 Reference material

2.1 Acronyms

The acronyms and abbreviations used in this summary of consultation (SOC) are listed in the table below.

Table 1: Acronyms

Acronym	Description
AAAA	Aerial Application Association of Australia
AC	advisory circular
AGL	above ground level
CASA	Civil Aviation Safety Authority
CASR	*Civil Aviation Safety Regulations 1998*
RD	rotor diameter

2.2 Definitions

Terms that have specific meaning within this SOC are defined in the table below. Where definitions from the civil aviation legislation have been reproduced for ease of reference, these are identified by 'grey shading'. Should there be a discrepancy between a definition given in this SOC and the civil aviation legislation, the definition in the legislation prevails.

Table 2: Definitions

Term	Definition
obstacles	Fixed (whether temporary or permanent) and mobile objects, structures, and parts of such objects and structures, that: a. are located on an area intended for the surface movement of aircraft or b. extend above a defined surface intended to protect aircraft in flight; or c. stand outside the defined surfaces mentioned in paragraphs a. and b. and that have been assessed as being a hazard to air navigation. **Note:** The defined surfaces in b. include obstacle limitation surfaces (OLS) and PANS-OPS surfaces.
obstacle limitation surfaces	A series of planes, associated with each runway at an aerodrome, that defines the desirable limits to which objects or structures may project into the airspace around the aerodrome so that aircraft operations at the aerodrome may be conducted safely
Objects and structures that affect aviation safety	An object or structure: a. that has a maximum height of at least 100 m above ground level b. that penetrates an obstacle limitation surface of an aerodrome c. that penetrates an obstacle data collection surface, as mentioned in Appendix 8 of Annex 15 to the Chicago Convention

Term	Definition
	d. that is an obstacle that is required to be included on an Aerodrome Obstacle Chart—ICAO Type A, as mentioned in Annex 4 to the Chicago Convention e. that is an obstacle that is required to be included on an Aerodrome Obstacle Chart—ICAO Type B, as mentioned in Annex 4 to the Chicago Convention or f. if AA requires data about the object or structure in the interests of aviation safety.

2.3 References

Legislation

Legislation is available on the Federal Register of Legislation website https://www.legislation.gov.au/

Table 3: Legislation references

Document	Title
Airports (Protection of Airspace) Regulations 1996	

International Civil Aviation Organization documents

International Civil Aviation Organization (ICAO) documents are available for purchase from http://store1.icao.int/

Many ICAO documents are also available for reading, but not purchase or downloading, from the ICAO eLibrary (https://elibrary.icao.int/home).

Table 4: ICAO references

Document	Title
ICAO Annex 4	Aeronautical Charts
ICAO Annex 15	Aeronautical Information Services

Advisory material

CASA's advisory materials are available at https://www.casa.gov.au/publications-and-resources/guidance-materials

Table 5: Advisory material references

Document	Title
The National Airports Safeguarding Framework - Guideline D	Managing the Risk of Wind Turbines Farms as Physical Obstacles to Air Navigation

3 Executive summary

We received 36 submissions in response to the consultation on Draft Multi-Part AC 139.E-01 and AC 175.E-02 v2.0 concerning objects and structures that affect aviation safety. Submissions were received from diverse stakeholders including airports, renewable energy companies, aviation operators, consultants, and individual pilots.

While stakeholders generally supported CASA's objective to consolidate and improve guidance on obstacle reporting and management, the consultation revealed several issues requiring careful consideration. The most significant concerns were centred on the proposed 30 m height threshold and its impact on transmission infrastructure, the need for clarity on process flows and aerodrome operator roles, obstacle lighting requirements, outdated wake turbulence guidance for modern wind turbines, and inadequate protection for uncertified aerodromes. Renewable energy developers expressed particular concern about project timelines, costs, and community amenity impacts from mandatory lighting requirements.

3.1 Respondent demographics

8 respondents identified as an aerodrome owner or operator, 10 as a pilot or aircraft operator, including one industry association representing the low-flying pilot community, 2 as aerodrome consultants, 2 as building/telecommunication tower/wind farm proponents, one as a publisher of aeronautical information and 13 others. 3 respondents identified as 'other', comprised industry associations, representing aerodromes, pilots and wind farm proponents. 26 respondents gave permission for their response to be published.

3.2 Key themes

Theme 1 - Process flow and aerodrome operator role

Key issues raised were:

- There is a lack of clarity on when aerodrome operators will be notified about proposed developments.
- The guidance appears to remove aerodrome operators from the assessment workflow.
- The burden is placed on aerodrome operators to "liaise" with proponents, rather than requiring proponents to notify aerodrome operators.
- The current process is effective and has proponents approaching aerodromes first, who then coordinate with regulatory agencies.
- There is a concern that a direct proponent-to-CASA process may bypass important aerodrome operator input.
- There is no reference to the Airports (Protection of Airspace) Regulations controlled activity approval process for federal airports.
- It is unclear how aerodrome operators will manage risk if they are not informed until after approval of a development.

Theme 2 - Obstacle lighting requirements

Key issues raised were:

- The recommendation for flashing white high-intensity lights for structures 150 m or more above ground level (AGL) which is a change from the historical approach as CASA has previously accepted lower-intensity lighting in rural areas with low background light.

- The guidance requires lighting to mark "highest point reached by rotating blades" which is physically impossible for wind turbines.
- There were concerns about community amenity impacts of flashing lights, particularly in rural areas
- Wind turbine collision incidents globally are extremely rare with only 2 recorded.
- Request for a performance-based approach rather than prescriptive requirements.
- There is a need for outcome-based guidance allowing alternative technologies (e.g. radar-activated systems, pilot-activated lighting).
- There is an inconsistency between CASA guidance and state planning frameworks.
- There is a cost and visual impact for lighting of transmission infrastructure at 45 m intervals.

Theme 3 - Wind turbine wake turbulence

Key issues raised were:

- There is a reference to studies for turbines with a rotor diameter (RD) less than 30 m, but modern turbines are up to 200 m RD.
- Guidance cites uncertainty regarding effects up to 16 RD downwind.
- Recent research (Rogers 2024, UK CAA studies) indicates turbulence effects limited to 5-7 RD.
- National Aerodromes Safety Framework Guideline D refers to 16 RD, but this may not be supported by current evidence.
- There is a lack of standardised methodology for assessing wake turbulence impacts.
- There is no guidance on assessment of cumulative effects of turbulence in Renewable Energy Zones.
- Pilots report lack of definitive operational guidance on safe separation distances.
- There is a need for further research on large modern turbines before mandating restrictions.

Theme 4 - Low-level flying operations

Key issues raised were:

- Wind monitoring masts (often 400-450 ft AGL) are unlit and not marked on aviation charts.
- These masts are extremely narrow and difficult to see, especially in low visibility.
- They are a significant hazard to agricultural aviation (crop dusting), mustering, pipeline inspection.
- They are also hazards for aerial firefighting and emergency response operations.
- There is a lack of notification process for temporary meteorological masts.
- Private/unregistered airstrips may not be captured in the hazard assessment processes.
- There is a need for marking of wind monitoring masts with marker balls and high-visibility flags on guy wires.
- Request for inclusion of Aerial Application Association of Australia (AAAA) and emergency services doctrine in the guidance material.

Theme 5 - Consultation and assessment process

Key issues raised were:

- No consultation occurred with industry prior to publication of the draft which was particularly disappointing to aviation operators.
- CASA airspace risk assessments are not shared with proponents or consultants preparing aeronautical studies.
- There was concern about duplication between proponent-commissioned aeronautical studies and CASA's 5-step assessment process.
- There is a need for CASA to publish its approved methodology for aeronautical studies.
- The independent audit process lacks detail on transparency, timeframes and cost allocation.
- Concerns about CASA resourcing - significant increase in assessment workload without clear resource strategy.
- There is a need for cost recovery mechanism if CASA is to assess all developments.
- Request for early-stage assessment pathways before formal planning referral.
- Desire for outcome-based guidance rather than prescriptive measures.
- Streamlining needed between CASA and Airservices Australia processes.

Theme 6 - 30 m Height threshold and transmission infrastructure

Key issues raised were:

- The guidance introduces a requirement for Defence and Airservices Australia to receive information on structures 30 m or more AGL.
- This would capture standard transmission poles/towers (typically 30-50 m height) which have not historically been assessed as aviation hazards.
- Existing transmission infrastructure is generally not lit for aviation safety purposes.
- Concerns about ownership complexities, contract arrangements, and cost implications for transmission infrastructure.
- The need for a public register and map viewer of reported structures to avoid confusion/duplication.
- Lack of clarity on the geographical scope i.e. does this apply nationally, or only within vicinity of aerodromes.

Theme 7 - Uncertified aerodromes

Key issues raised were:

- Guidance provides little protection for hundreds of uncertified aerodromes across Australia.
- These aerodromes are vital for training, regional access, emergency services and local economies.
- No clear process or requirement for proponents to engage with uncertified aerodrome operators.
- CASA has "no authority or powers" for structures outside the vicinity of a certified aerodrome which creates a regulatory gap.
- Private airstrips (often unregistered) are not captured in the development notification processes.
- Small aerodrome operators lack resources to fend off large infrastructure corporations.

- The need for explicit recognition and consultation requirements.
- Safety risks are not mitigated by just marking/lighting if an obstacle is unavoidable in the first place.

Theme 8 - Temporary structures

Key issues raised were:

- Guidance refers to structures 30 m or more AGL, but it is unclear if this applies to temporary structures like cranes.
- Question whether approval was required before erection, or can they be erected and reported afterwards.
- Meteorological masts are often installed at the earliest project stages, prior to a viability decision for a wind farm.
- Meteorological masts are frequently exempt under state planning frameworks (in NSW if less than 110 m in height, in Victoria if erected for less than 3 years, and in QLD they are exempt).
- It would be a high regulatory burden for temporary, relatively low-impact infrastructure.
- There is a need for streamlined exemptions or requirements based on size, location and duration.
- Inconsistency between CASA requirements and AAAA guidance for meteorological mast marking.
- Unclear if re-reporting was required for previously assessed temporary structures.

Additional themes identified

Charts and database updates:

- There is a need for more frequent updates to aeronautical charts.
- Concern that digital obstacle data is not accessible to all users who need it.
- Requests for a public map viewer with obstacles.

Defence requirements:

- Lack of clarity on when Defence consultation is required.
- There is a need for publicly available Defence references.
- There is inadequate guidance on Defence Aviation Areas.

Cost and compliance burden:

- Significant concerns about project costs and delays.
- The need for proportionate, risk-based approach.
- The desire for cost recovery if CASA workload increases.

Geographical Scope:

- Confusion about geographic reporting limits i.e. is it 15 km from aerodrome, nationally, or only within obstacle limitation surface areas.
- There is a need for clearer spatial boundaries.

PANS-OPS and RNP-AR:

- Request to include RNP-AR surfaces and non-PANS-OPS surfaces in the guidance.

- Include that instrument procedures can be redesigned as mitigation option.

National Consistency:

- Wind farms create unique hazard considerations.
- There are contradictions between federal and state guidance.
- There is a need for wind farm-specific standalone guidance.

4 Conclusion

The consultation on *Draft Multi-Part AC 139.E-01 and AC 175.E-02 v2.0* has generated substantial and detailed feedback from a diverse range of aviation stakeholders. The level of engagement demonstrates the significant importance of this guidance to the aviation industry, infrastructure developers, and the broader community.

While stakeholders appreciate CASA's efforts to consolidate and improve guidance on obstacles and structures affecting aviation safety, several issues have been identified that require careful consideration and revision before finalisation.

Stakeholders have provided constructive, detailed recommendations to address these issues. Many submissions offer specific suggested wording changes, reference relevant research and international best practice, and propose practical solutions that would balance aviation safety with infrastructure development needs and community amenity.

The renewable energy sector, in particular, has raised substantive concerns about the potential impacts of the new requirements on Australia's clean energy transition, including project delays, increased costs, and community acceptance challenges related to lighting requirements.

Airport operators have emphasised the need to maintain their role in the airspace protection process and ensure clear processes exist for early notification of proposed developments.

Aviation operators, particularly those engaged in low-level operations such as aerial agriculture, firefighting, and emergency services, have highlighted the real and present safety risks from existing unlit and unmarked structures, particularly meteorological towers.

Moving forward, CASA should consider:

a. Conducting targeted workshops with key stakeholder groups to work through the complex issues raised.

b. Engaging specialist aviation consultants and renewable energy developers in developing practical, workable solutions.

c. Collaborating with Airservices Australia and Department of Infrastructure to ensure process alignment.

d. Establishing an industry working group to develop wind farm-specific guidance.

e. Undertaking or commissioning research on wake turbulence from modern large wind turbines.

f. Developing clearer, more detailed guidance that addresses the scenarios and contexts raised by stakeholders.

g. Ensuring adequate resourcing is in place to support the revised guidance and assessment processes.

5 Future direction

CASA will carefully consider the feedback received and appreciates the constructive engagement with industry which is necessary to develop appropriate guidance. CASA will seek to ensure the Multi-Part AC effectively balances aviation safety with infrastructure development needs, bearing in mind the relevant applicable regulatory frameworks.

Given the substantial and diverse responses provided through the consultation, CASA will take some time to analyse responses and determine the most appropriate guidance is provided to industry in relation to the hazards associated with objects and structures, and gaseous emissions.