

## Summary of Responses

### Draft Advisory Circular (AC) 139-23(0) – Laser Emissions Which May Endanger the Safety of Aircraft

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# Comments relating to the draft Advisory Circular (AC) 139-23(0) – Laser Emissions Which May Endanger the Safety of Aircraft

## How comments have been administered

Where comments are the same or substantially similar, they have been amalgamated into a single response. Where comments have an obvious action that can be applied to them, the actions have been documented in the response. Some comments state an opinion which by its nature is difficult to incorporate into meaningful change to the proposed AC. Where this is the case, CASA has noted the comments.

The following comments substantially reflect the consultation process. A total of 18 online responses, plus one e-mail response were received. The comments received, and CASA's response to the comments, are summarised below.

### COMMENT 1

Two respondents commented that the graphics resolution needed improving to aid readability of the Figures.

#### *CASA Response*

*This comment is accepted. CASA will endeavour to improve the resolution of the figures in the AC.*

### COMMENT 2

One respondent requested more detail about lasers, such as different units for power levels, laser wavelength, etc, including those operated outside visible spectrum.

#### *CASA Response*

*The AC is applicable to visible laser beams, that is, to any/all wavelengths within the visible spectrum. To go into greater detail is not warranted.*

*No Change.*

### COMMENT 3

Two respondents requested that elevations be given in feet, and distances be given in nautical miles, or both the current metric distances plus feet and nautical miles.

#### *CASA Response*

*The AC is intended for use by aerodrome operators, and the operators of laser*

*light shows. In Australia, metric units of measure are appropriate for these groups. While pilots are familiar with feet and nautical miles for elevation and distance, this AC is not intended for use by pilots.*

*No change.*

#### **COMMENT 4**

Three respondent queried how the AC would deal with lasers that were deliberately/maliciously aimed at aircraft; how the guidance would be enforced; what penalties would be applied.

##### ***CASA Response***

*The AC is intended for use by aerodrome operators, and the operators of laser displays used for advertising, entertainment, etc. in the planning and agreements for the operation of visible laser displays in the vicinity of aerodromes.*

*CASA acknowledges that this AC will not prevent the wilful or malicious use of lasers against aircraft by persons intending to cause mischief. Even if the AC was brought to their attention, such irresponsible individuals would not be persuaded to operate their lasers in accordance with the AC's advice, because their intent is public nuisance, and not aviation safety.*

*The AC guidance relies on the good will of responsible, professional, operators of laser light shows. It is not an enforceable regulation.*

*The AC will be modified to make the intent and applicability of the guidance clearer.*

#### **COMMENT 5**

One respondent suggested that the guidance should be included in Local Authority Planning Scheme, and that more detail should be included as to what was permitted in each zone.

##### ***CASA Response***

*As indicated in the reply to 4 above, the AC is only guidance, for use by responsible operators of laser light displays, in the planning and arranging of their shows.*

*CASA has no authority over Local Planning bodies. We would, of course, provide them with our advice, including the guidance in this AC, when requested.*

#### **COMMENT 6**

One respondent requested additional information to be provided about MPE, including numerical values.

**CASA Response**

*Maximum Permissible Exposure is an internationally accepted maximum level of laser beam energy below which exposure to laser beam is not expected to produce adverse biological damage. There are differences in MPE calculations depending on whether the laser beam is pulsed or continuous.*

*MPEs for the skin and eye for any laser beam and exposure condition are available in various documents, such as the International Electrotechnical Commission (IEC) 60825-1: 1998, the American National Standards Institute ANSI Z136-1-2000, and other related international documents.*

*Specific information about MPE values is beyond the scope of this AC. The AC does Reference ICAO Doc 9815, and that in turn provides additional information on MPE, including references to source documents for MPE values.*

*No change.*

**COMMENT 7**

One respondent commented that “nano” and “micro” units should be shown as superscripts.

**CASA Response**

*The draft contains some typographic error where superscripts did not reproduce correctly.*

*These will be corrected before final publication.*

**COMMENT 8**

One respondent suggested that the zones should be treated similar to Obstacle Limitation surfaces, ANEF zones, PANS-OPS surfaces. To be enforceable, they should be issued as regulations rather than an Advisory Circular.

**CASA Response**

*See comment 4 above. The zones are not intended to be legally enforceable. Rather, they are to be used in good faith, when planning and arranging laser displays.*

**COMMENT 9**

One respondent suggested that the basis of the AC was unacceptable, on the grounds that any laser light can be considered dangerous, and therefore laser light was not acceptable in any movement areas.

**CASA Response**

*The AC is derived from guidance material published by ICAO. The ICAO advice was based on expert advice from a study group consisting of experts in*

*ophthalmology and vision care, light engineering and physics, flight operations and regulatory aviation medicine. These experts were drawn from Canada, Netherlands, United Kingdom, United States, the Aerospace Medical Association, and the International Federation of Airline Pilots Association. Their expert advice was that the zones described in the AC will provide the level of protection described in the AC.*

*No change.*

#### **COMMENT 10**

One respondent suggested that the AC should be referenced to the Airports Protection of Airspace Regulations and be incorporated into the section on Non-structural activities, with penalties to apply for non-compliance.

##### ***CASA Response***

*See comments 8 and 4, above.*

#### **COMMENT 11**

One respondent suggested that the zones, being in the vicinity of aerodromes, were not sufficient to protect pilots flying in other areas, and that any green (350-352 µm) laser should be banned.

##### ***CASA Response***

*See comment 9, above. The ICAO study group experts consider that the zones recommended in the AC will provide adequate protection for pilots.*

#### **COMMENT 12**

One person submitted a response that had absolutely nothing to do with the draft AC. It was a disgruntled resident taking the opportunity to air their complaint about pilot training at Parafield.

##### ***CASA Response***

*No action required.*

#### **COMMENT 13**

One respondent was concerned about how laser operators were trained, and the possibility of introducing penalty system. Also, concerned about irresponsible use of lasers near aerodromes, by the general public.

##### ***CASA Response***

*See 4, above.*

**COMMENT 14**

One respondent suggested that greater emphasis be given in the various sections, that it was visible laser light that was being discussed.

***CASA Response***

*Sub-section 5.5 in the AC clearly states that the restrictions on the use of laser beams in the three protected flight zones, refers to visible laser beams only*

*In the proposed modification that will clarify applicability, see 4 above, the applicability to visible lasers will be further emphasised.*

**COMMENT 15**

One respondent suggested that the laser zones should be related to the obstacle limitation surfaces of the aerodrome, because they are already familiar to aerodrome operators, and are monitored for activity likely to affect aircraft operations.

***CASA Response***

*The laser protected zones are in accordance with the ICAO guidance material; see 9 above. The extent of the zones is related to the power of the lasers, and consequently their potential to cause eye damage, flash-blindness, after-image effects, etc. To change the boundaries would either reduce the protection to pilots, or unnecessarily restrict laser shows from locations where they did not pose a hazard to pilots.*

*No change.*

Prepared by:

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