

AAAA Tall Structures Policy

Last Revised: February 2017



Introduction

Tall structures—such as radio masts—are a direct threat to aviation safety – and especially aerial application. In an already hazardous low-level environment, tall structures impose additional operational costs onto aerial applicators in addition to increased risk.

AAAA has developed this policy so as to inform regulators, tall structure developers and operators alike of the need for action on their part to fulfill their duty of care to Australia's aerial applicators.

AAAA Tall Structures Policy

As a result of the potential safety and economic impact of tall structures and supporting infrastructure on the sector, AAAA **opposes all tall structure developments** in areas of agricultural production or elevated bushfire risk unless the developer is able to clearly demonstrate they have:

1. consulted honestly and in detail with local aerial application operators
2. sought and received an independent aerial application expert opinion on the safety and economic impacts of the proposed development that is acceptable to local operators
3. clearly and fairly identified that there will be no impact on the aerial application industry from either safety or economic perspectives and
4. if there is an identified impact on local aerial application operators, provided a legally binding agreement for compensation over a fair period of years for loss of income to the aerial operators affected.
5. Adequately marked any tall structures and related infrastructure and advised pilots and operators of its presence.

AAAA believes that the above processes should also apply for all tall structures that have already been approved or erected.

While it is not AAAA policy to provide specific comment on particular development proposals due to resource limitations, AAAA notes that tall structures can have far-reaching footprints that can remove significant amounts of land from treatment for a considerable distance from the

tall structure vicinity.

Operational implications of each development will vary enormously depending on the site, the positioning of the tall structure, orientation of affected paddocks relative to the tall structure, the type of aerial application taking place, the aircraft used, the pilot's experience, the meteorological conditions, the site elevation, the position of any airstrip relative to the tall structure and a range of other variables.

However, it is clearly unacceptable that one industry can impose significant safety threats on another industry.

AAAA believes that:

- All tall structures—including guy wires and infrastructure—must be clearly marked to assist pilots to see them
- All tall structures and associated infrastructure must be required to be removed when no longer in use.
- The Commonwealth Government should establish and maintain a mandatory Tall Structures Reporting and Advice System, based on a real-time GIS system available on the internet to all bona-fide low level airspace users.

Recommendations to Government

Land Planning

AAAA recommends that the Commonwealth, States and Territories cooperate so as to make the NASAG processes binding on all government jurisdictions when they consider development

applications for tall structures.

AAAA recommends that the Commonwealth expand its work under the NASAG process to include a new Guideline for the development of tall structures away from airports, including considerations of existing land use, known aerial application activity, notification and marking of tall structures.

The aim of such a Guideline, in addition to enhancing aviation safety, should be to ensure that tall structure developments do not adversely affect known aviation activities or aviation safety, and are compatible with existing land-use patterns.

AAAA recommends that the Commonwealth provide coordinated and comprehensive information to all tall structures developers on their responsibilities for aviation safety, including raising the duty of care requirements established under *Sheather v Country Energy* (NSW Court of Appeals) for owners of assets that pose a known threat to aviation activities to provide for suitable marking and other safety initiatives.

The Commonwealth should establish a head of power to regulate tall structure developments away from airports to protect aviation safety. This should include mandatory marking and notification of tall structures and the power to veto proposed developments where they interfere with aviation safety.

The Commonwealth should develop a national tall structures web-based database that is accessible in real time by all low-level aviation pilots and which captures all tall structures. The database should also capture other threats to low-level aviation including wind monitoring towers and powerline mapping systems.

CASA should set a much lower than previously used height trigger for notification of tall structure developments - down to 50 feet in an area of known aerial application activity—or use a risk assessment based approach.

CASA should work with Airservices Australia and any other relevant agencies to ensure that tall structures are included on suitable aviation mapping including WAC charts and topographic maps in a more timely manner.

Legal Responsibilities of Developers

AAAA's view is that the case of *Sheather v Country Energy* (NSW Court of Appeals) clearly established that anyone with infrastructure posing a threat to aviation must consider the risks that infrastructure poses to aviation safety and respond appropriately through marking or other measures to safeguard aviation operations.

While the requirement of marking of towers and notification to the RAAF Tall Structures Data-

base is covered to some degree by the CASA regulations, this is based on what AAAA believes is a flawed approach to risk management and some towers may be excluded from the requirements because of the height threshold.

The Federal and State governments have undertaken significant work in this area through the National Safeguarding of Airports Working Group - [National Airports Safeguarding Framework | Department of Infrastructure, Transport, Regional Development, Communications and the Arts](#) - AAAA believes the Commonwealth should make compliance with these guidelines mandatory as a first step in improving aviation safety.

In particular, AAAA have identified unmarked and un-notified wind monitoring towers as a safety threat to legitimate low level aviation—one that significantly increases the liability of developers should an accident occur. AAAA suggests tall structure developers should consider AAAA evidence to the Senate Windfarm inquiry and the death of an agricultural pilot in the US from hitting an unmarked, unnotified tower which has since resulted in significant legal and legislative action in the US - [ParlInfo - COMMUNITY AFFAIRS REFERENCES COMMITTEE : 25/03/2011 : Social and economic impact of rural wind farms \(aph.gov.au\)](#)

Powerline Mapping and Marking

No pilot goes to work intending to hit a wire, so we must assume that pilots are doing their best to manage an extremely difficult operational task that would be significantly supported by mandatory national requirements for the provision of electricity network mapping information to pilots and operators and the visual marking of 'high risk' powerline spans - such as those that have already been hit and those assessed by pilots and operators as posing a significant risk.

Safety awareness in the aerial application industry is already extremely high and backed by a range of strong risk management systems and AAAA education and training initiatives.

AAAA has a long history of working positively with Essential Energy in NSW (formerly Country Energy) and this has led to the provision of mapping of networks to low level airspace users, and the placement of over 1200 markers on dangerous powerlines throughout NSW.

The key issue with marking systems is that they must be able to be fitted 'live line' by qualified electricity company staff. This brings the cost down from the traditional \$2-3000+ for a single large orange ball marker (as the line must be isolated / turned off for fitting and several crews are involved) to about \$100 per modern marker supplied and fitted. This puts the costs of marking well within the reach of electricity companies, landholders and others.

Essential Energy also works cooperatively with AAAA on information campaigns - see for example:

www.essentialenergy.com.au/safety/aviation-safety

AAAA has also sought to work with other electricity companies in other States. Unfortunately, that work has not resulted in mapping or marking systems being widely adopted, mainly due to the way information can be provided, but also a lack of interest in engaging on this critical safety issue.

AAAA is hopeful of improved software removing this current impediment to the national availability of powerline mapping.

However, the power of a national mandatory requirement for the provision of this already existing data should not be underestimated in terms of ensuring powerline companies contribute to safer aviation.

Review of Australian standard AS 3891 - Air Navigation - Cables and their supporting Structures - Safety and Marking Requirements - Part 2

The Australian Standard AS3891 on wire marking is currently being reviewed and both AAAA and CASA have been asked to participate on that review committee.

AAAA chaired the previous review of the standard some years ago and was frustrated in achieving any substantive changes to marking thresholds by concerted resistance from electricity network owners.

However, the previous review of the Standard did permit the use of new types of markers that are able to be placed during live-line work and are consequently far cheaper to install and even more visually effective than the traditional large 'ball' markers.

AAAA hopes that the upcoming review will similarly improve the Standard in terms of being less restrictive on innovative marker types (of which several are now available but which have difficulty conforming to the current Standard).

AAAA is also hopeful that the current hard triggers for marking of powerlines with significantly long spans (up to 1500 metres) and very high clearances above ambient vegetation (up to 90 metres) will eventually be addressed to be set at more realistic and safer - ie shorter and lower - distances.

AAAA notes that the Australian Standard does not appear to be binding or mandatory for electricity network owners and would strongly support its mandating by regulation.

Operational Impacts

The following potential impacts on aerial application should be considered by all tall structure developers:

- positioning of tall structures may affect local aerial application operations, depending on the particular site.
- impacts could vary from affecting flight lines to treatment height and accuracy, maneuvering areas and possibly take-off and landing splays if an airfield is nearby (see for example, CASA CAAP 92-1 for agricultural airstrips – www.casa.gov.au – search for CAAP 92-1.)
- it may not be the land or farm that the tall structure is to be situated on that will be affected. Neighboring farms, especially any with borders close to the tall structure site, may suffer significant impacts by imposed limits on the maneuvering areas of aerial application aircraft.
- a key impact may not be the tall structure itself, but the positioning of any powerline that would lead from the tall structure. Any supporting powerline should be put underground. If this is not possible, any above-ground cable must be adequately marked.

AAAA Activities to date

AAAA has done a lot of work to make it easier to mark tall structures, guy wires and powerlines through amendment of the national standard on marking of wires so as to use a marker developed by Essential Energy (NSW) with the cooperation of AAAA.

There is now little practical reason why tall structures and guy wires should not be clearly marked.

AAAA also passes on information to members that has been provided to it by developers on the physical location of some tall structures. However, only a few developers provide this information and again there is little doubt that many tall structures are going up unmarked and unknown until hopefully spotted by pilots during pre-application planning and inspections.

More comprehensive safeguards must include a mandatory national system of communication of the position of all tall structures towers and the inclusion of this on a national database accessible by low level pilots.

AAAA Windfarm and Tall Structures Notification Process

Despite extremely limited resources, AAAA tries to assist aviation safety by advising those of our members on our email lists of the position of tall structures if advised by developers.

While AAAA has very limited resources, tall structure developers are encouraged to provide these details by email to AAAA.

AAAA will pass that information on to our members in that State on the basis of no assumed liability.

AAAA points out clearly that this in no way absolves the tall structure developer from the need to mark the masts so as to contribute to a discharge of their due diligence and duty of care to pilots.

AAAA provides this facility on the basis of it being information of a general nature only and the understanding that the information, for a range of reasons (including email failure, not all members being covered by email, or non-use by members, or operational shortcomings) will not provide any guarantees of aviation safety.

AAAA accepts no liability in terms of the accuracy of information provided, and makes no representations as to the use of the information provided or the likely actions of members.

Tall structure notifications to AAAA should include, in the following order:

- State
- Distance and direction relative to the nearest significant town (eg 10 miles SE of xxxx)
- Latitude and longitude
- Location—eg top of hill
- Height to top
- Type—eg lattice tower / monopole and guys
- Footprint - eg guys 45 metres from pole
- Date of erection
- Marking—eg painted orange/white / strobe
- Any other relevant information

FURTHER INFORMATION

If you would like more information on the vital and responsible role the aerial application industry plays:

www.aaa.org.au
Ph: 02 6241 2100
Email: admin@aaa.org.au

PO BOX 353
Mitchell ACT 2911

