

# Response to Terms of Reference – Aviation White Paper

Aviation Security Identification Cards (ASICs)

Ian Ryan

## Terms of Reference

This response addresses the following Terms of Reference:

- how to support and regenerate Australia's general aviation sector;
- maintaining fit-for-purpose aviation safety, air navigation and aviation security systems and service delivery agencies;
- other significant issues raised during the consultation process.

## Summary

Aviation Security Identification Cards (ASICs) are required to access the airside apron at airports with Scheduled Air Transport operations (security-controlled airports). Many of these airports are mixed-use, with flight training, charter, aerial work and private operations occurring. This means that ASICs are required by a private pilot flying their personal aircraft from a security-controlled airport, even if the airline apron is over 1km away from the private pilot's parking area.

The use of ASICs in Australia does not align with international practice, and does not contribute to the safety of the travelling public when applied to private pilots or new student pilots. The Aviation Safety Regulation Review 2014 highlighted the "scope-creep" and other dissatisfactions of pilots with the scheme. [1, pp. 117-121] Recommendation 36 of the ASRR was deferred to a later review of ASICs, promptly forgotten about and never implemented. While it is possible the review was conducted, the General Aviation industry was not consulted and the reports will not be released due to the "sensitivity of the information it contains". [2]

The costs of ASICs are a burden on General Aviation and private pilots. These cards have contributed to the "death by a thousand cuts" of ever-increasing regulatory requirements and costs on GA, and the implementation is poorly suited to GA. The costs can be reduced by both implementing ASRR Recommendation 36, and by adopting the "Working with Children Check" (WWCC) model, implemented for security checks when working with children or other vulnerable people in the community. The WWCC model states that if a person is not using their security check in the course of paid related work, the person may hold a volunteer check free-of-charge. [3] [4]

## Recommended Actions by Government/Government Agencies

One or more of the following (preferably both):

1. Implement Recommendation 36 of the Aviation Safety Regulation Review 2014:

*The Australian Government amends regulations so that background checks and the requirement to hold an Aviation Security Identification Card are only required for unescorted access to Security Restricted Areas, not for general airside access. This approach would align with international practice.*

2. Direct the Cyber and Infrastructure Security Centre, either by policy or regulation, to issue ASICs free-of-charge for applicants who have an operational need to hold an ASIC and do not work in the aviation industry (a “volunteer check”).

## Detail

Much of the background on ASICs is available in the ASRR, Section 6.2. [1] Since then, there have been two major changes to the ASIC system. The first, is an increase in the security checks performed, and therefore an increase in cost to the end-user. The second is the government taking over responsibility for issuing ASICs. [5]

Both of these changes have not improved the system from the point of view of the pilot. The costs have increased, and having only one issuing body will make it more difficult for pilots to obtain an ASIC, as there will be fewer agents authorised to interview ASIC applicants.

These changes align well with one of the comments put forth in the ASRR:

*The Panel noted that communications on aviation security requirements are written from a government perspective that suggests tighter regulatory controls make the transport system more secure and are therefore a positive step. For example, the Department’s website outlines ‘enhancements’ made to the ASIC scheme following the 2009 Aviation White Paper. Similarly, in its consultations with the Panel, the OTS referred to ‘enhancements’ made to the ASIC scheme. The Panel is, however, aware that the ‘enhancements’ referred to by the OTS are largely increases in regulation, which, from an industry perspective, is not an enhancement, but a step backward.*

Future changes to the ASIC system must be fit-for-purpose, and not another cost and regulatory burden for industry and private pilots to wear.

## References

- [1] Australian Government, "Aviation Safety Regulation Review," Commonwealth of Australia, Canberra, 2014.
- [2] Cyber and Infrastructure Security Centre, "Reviews and inquiries," 05 04 2022. [Online]. Available: <https://www.cisc.gov.au/legislative-information-and-reforms/aviation-and-maritime-transport-security/reviews-and-inquiries>. [Accessed 10 03 2023].
- [3] State of Victoria, "Volunteer to Employee Check | Working with Children," Department of Justice and Community Safety (Vic), 04 05 2021. [Online]. Available: <https://www.workingwithchildren.vic.gov.au/individuals/current-cardholders/volunteer-to-employee-check>. [Accessed 03 03 2023].
- [4] Government of New South Wales, "Upgrade your WWCC clearance from volunteer to paid," Service NSW, 03 03 2022. [Online]. Available: <https://www.service.nsw.gov.au/transaction/upgrade-your-wwcc-clearance-volunteer-paid>. [Accessed 03 03 2023].
- [5] Department of Home Affairs, "Changes to the ASIC and MSIC schemes," Cyber and Infrastructure Security Centre, 22 12 2022. [Online]. Available: <https://www.cisc.gov.au/legislative-information-and-reforms/aviation-and-maritime-transport-security/changes-to-the-asic-and-msic-schemes>. [Accessed 03 03 2023].

# Response to Terms of Reference – Aviation White Paper

Consideration of Past Government Reviews

Ian Ryan

## Terms of Reference

This response addresses the following Terms of Reference:

- how to support and regenerate Australia's general aviation sector;
- maintaining fit-for-purpose aviation safety, air navigation and aviation security systems and service delivery agencies;
- other significant issues raised during the consultation process.

## Summary

Successive past governments have conducted extensive reviews into how to improve aviation, revitalise the GA industry and other worthy goals. These reviews (and their proposed recommendations) have been generally industry-supported, however the recommendations have often been only partly-implemented, forgotten about or thrown out when governments change, when departments restructure or just through the passage of time.

One such example is the Aviation Safety Regulation Review (2014). This broad-reaching review covered many topics, and included many recommendations, mostly supported by industry. Some of these recommendations have never progressed, despite expectations to do so. For example, Recommendation 36 relating to Aviation Security Identification Cards, was deferred to another review, and never acted upon (see other submission). Similar issues have been encountered on recommendation 35, 33 and many others.

## Recommended Actions by Government/Government Agencies

Include in the terms of reference of the Aviation Green/White Papers to review past government reviews, and to consider whether the “Status of Government Response” accurately reflects the outcome of those recommendations.

# Response to Terms of Reference – Aviation White Paper

SBAS L1 Position Signal

Ian Ryan

## Terms of Reference

This response addresses the following Terms of Reference:

- how to support and regenerate Australia's general aviation sector;
- maintaining fit-for-purpose aviation safety, air navigation and aviation security systems and service delivery agencies;
- other significant issues raised during the consultation process.

## Summary

Satellite-based Augmentation Systems (SBASs) are a method of improving accuracy of Global Navigation Satellite Systems (GNSSs), such as the US-run GPS. SBAS permits more accurate approaches to land for aircraft, by providing a vertical path (glideslope) for the aircraft to follow, which GPS alone cannot do. These 3D approaches are safer than 2D approaches, and some aircraft incidents (and deaths) may not have occurred if 3D approaches were available. [1]

The current implementation of 3D approaches outside of capital city airports is Baro-VNAV. Baro-VNAV approaches are widely available in Australia, however Baro-VNAV requires equipment that is not available for the General Aviation (GA) fleet. As of now, there is only one small GA aircraft type that can conduct Baro-VNAV approaches. [2]

SBAS is able to simulate Baro-VNAV so that aircraft equipped with SBAS receivers can fly Baro-VNAV approaches without the equipment (which does not exist for GA). All aircraft capable of flying instrument approaches in Australia are required to have equipment that contain L1 SBAS receivers, due to a separate government mandate. [3]

Currently, the Australasian SBAS, SouthPAN, is undergoing trials. Alongside L1, it plans to implement two newer SBAS signals (DFMC/L5 and PVS), which no aircraft systems can utilise. The current plan is to switch on all three systems for Safety-of-Life Services (such as aviation) at the same time in 2028, rather than turning on L1 for these services now. [4]

Turning on L1 Safety-of-Life Services earlier than planned will result in safer flight and possibly save lives. Even if the service is only available some of the time or in a smaller area than all of Australia, having 3D approaches is safer than not having 3D approaches.

## Recommended Actions by Government/Government Agencies

Direct Geoscience Australia/SouthPAN to activate L1 SBAS for Safety-of-Life Services early.

## References

- [1] Australian Transport Safety Bureau, "Controlled flight into terrain involving Cessna 404, VH-OZO, Lockhart River, Queensland, on 11 March 2020," ATSB, Canberra, 2020.
- [2] S. Hitchen, "Australia's Own," Australian Flying, 03 10 2016. [Online]. Available: <https://www.australianflying.com.au/flight-tests/australia-s-own>. [Accessed 04 03 2023].
- [3] Airservices Australia, "Automatic Dependent Surveillance – Broadcast Questions and Answers for Owners of Australian General Aviation Aircraft," 12 2016. [Online]. Available: [https://www.airservicesaustralia.com/wp-content/uploads/FAQ\\_ADS-B\\_DEC16.pdf](https://www.airservicesaustralia.com/wp-content/uploads/FAQ_ADS-B_DEC16.pdf). [Accessed 04 03 2023].
- [4] Geoscience Australia, Land Information New Zealand and SouthPAN, "Service Definition Document for Open Services - Project: Southern Positioning Augmentation Network," 05 12 2022. [Online]. Available: [https://www.ga.gov.au/\\_\\_data/assets/pdf\\_file/0011/123320/SBAS-STN-0001\\_02\\_SDD-OS.pdf](https://www.ga.gov.au/__data/assets/pdf_file/0011/123320/SBAS-STN-0001_02_SDD-OS.pdf). [Accessed 04 03 2023].

# Response to Terms of Reference – Aviation White Paper

Scenic Flights NPRM

Ian Ryan

## Terms of Reference

This response addresses the following Terms of Reference:

- how to support and regenerate Australia's general aviation sector;
- maintaining fit-for-purpose aviation safety, air navigation and aviation security systems and service delivery agencies;
- other significant issues raised during the consultation process.

## Summary

Following the introduction of CASR Parts 119 and 135, the distinction between RPT (airline) and charter operations disappeared. This had the effect of requiring a small scenic flight operator to comply with the same regulatory (and financial) burden as a small airline operator.

CASA offered a solution – NPRM 1306OS - Regulatory requirements for scenic flights in small aircraft [1]. This rule change proposal would reduce the regulatory burden imposed on scenic flight operators, while still subject to appropriate oversight by CASA:

*On a risk management basis, CASA considers that some of the requirements included in the proposed Part 119 of CASR 1998 are not necessary for local aircraft operations in small aircraft carrying limited numbers of passengers.*

*CASA's preferred option of a simplified authorisation model would provide significant savings for operators entitled to conduct operations under this proposed regulation ... in the absence of the proposed regulation, a scenic flight operator would be required to obtain an AOC with the associated CASA fees and charges. [2]*

Unfortunately, this NPRM was set aside and has not been considered again. Some of these operators were small flying school operations which had their main source of income (flight training) supplemented by scenic flights in the local area. These operators have stopped offering scenic flights, and many others have also chosen to exit the market.

The last official information about this NPRM states:

*CASA ... will consult with industry in 2019 on the regulatory provisions for scenic and joy flight operations. [3]*

Despite this statement, nothing has occurred since.



## Recommended Actions by Government/Government Agencies

CASA should prioritise implementation of NPRM 1306OS – Regulatory requirements for scenic flights in small aircraft.

## References

- [1] Civil Aviation Safety Authority, "NPRM 1306OS - Regulatory requirements for scenic flights in small aircraft," 20 01 2015. [Online]. Available: [https://web.archive.org/web/20150403004901/http://casa.gov.au/scripts/nc.dll?WCMS:STANDARD::pc=PC\\_102368](https://web.archive.org/web/20150403004901/http://casa.gov.au/scripts/nc.dll?WCMS:STANDARD::pc=PC_102368). [Accessed 03 04 2015].
- [2] Australian Flying Magazine, "CASA supports no Operator's Certificate for Joy Flights," 05 02 2015. [Online]. Available: <https://www.australianflying.com.au/news/casa-supports-no-operator-s-certificate-for-joy-flights>. [Accessed 10 03 2023].
- [3] Civil Aviation Safety Authority, "Proposed rules for air transport operations - smaller aeroplanes," 04 2019. [Online]. Available: <https://consultation.casa.gov.au/regulatory-program/cd1804os-1/results/summaryofconsultationoncd1805oscasrpart135smalleraeroplanes.pdf>. [Accessed 10 03 2023].

# Response to Terms of Reference – Aviation White Paper

Unleaded Avgas

Ian Ryan

## Terms of Reference

This response addresses the following Terms of Reference:

- how to maximise the aviation sector's contribution to achieving net zero carbon emissions including through sustainable aviation fuel and emerging technologies;
- changing aviation technologies and ways to position our policies, regulations and systems to encourage uptake and manufacturing of new, more efficient, transport technologies;
- how to support and regenerate Australia's general aviation sector;
- maintaining fit-for-purpose aviation safety, air navigation and aviation security systems and service delivery agencies;
- other significant issues raised during the consultation process.

## Summary

Spark-ignition fuels (piston-powered engines) are two steps behind turbine fuels in terms of sustainability. First, Tetraethyl Lead (TEL) must be removed from Avgas. TEL is an octane booster, and also an environmental and health concern.<sup>1</sup> The use of TEL is banned worldwide for vehicle use, except for aviation.

Some 70% of spark-ignition powered aircraft in Australia could use unleaded fuels, but administrative and cost-of-entry barriers block its use.<sup>2</sup> In Australia, both the aircraft and engine must be certified to use unleaded Avgas. This does not meet international-best practice. In Europe and the UK, an aircraft with an engine certified to use unleaded avgas may do so, regardless of aircraft certification.<sup>3</sup> <sup>4</sup> Some aircraft manufacturers are slow to go through this costly recertification exercise for no benefit to their own company. Some manufacturers rely on the European provisions in their own countries, so do not bother to pursue the certification.

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<sup>1</sup> Sammy Zahran, Christopher Keyes & Bruce Lanphear, 'Leaded aviation gasoline exposure risk and child blood lead levels', *PNAS Nexus*, vol. 2, no. 1, 2023, p. pgac285.

<sup>2</sup> *Lycoming Service Bulletin 1070AB - Specified Fuels for Spark-Ignited Gasoline Aircraft Engine Models*, Lycoming, 2020, viewed 10 March 2023, <<https://www.lycoming.com/service-instruction-no-1070-AB>>.

<sup>3</sup> *Introduction of Generic Concession No.7 (Unleaded Aviation Gasoline (Avgas) UL91\_3.pdf*, Civil Aviation Authority (UK), 2012, viewed 10 March 2023, <[https://publicapps.caa.co.uk/docs/33/20121031Introduction%20of%20Generic%20Concession%20No.7%20\(Unleaded%20Aviation%20Gasoline%20\(Avgas\)%20UL91\\_3.pdf](https://publicapps.caa.co.uk/docs/33/20121031Introduction%20of%20Generic%20Concession%20No.7%20(Unleaded%20Aviation%20Gasoline%20(Avgas)%20UL91_3.pdf)>.

<sup>4</sup> *May I use Unleaded Aviation Gasoline (Avgas) UL 91 even if the airframe TCDS states that the minimum fuel octane is 100?*, EASA, n.d., viewed 10 March 2023, <<https://www.easa.europa.eu/en/faq/19380>>.

Australia needs regulatory relief - follow the European model and allow aircraft with unleaded certified engines to use unleaded fuels.

Small incentives for unleaded avgas and eventually disincentives for leaded avgas should be phased in to encourage its use:

- Immediately, fuel excise (3.556c per Litre) could be removed for unleaded avgas.
- Next, interest-free loans for unleaded avgas infrastructure (fuel bowzers, trucks etc.) should be offered to encourage take-up in the market.
- Finally, in a number of years when unleaded avgas can replace 100% of fuels, the fuel excise on leaded avgas can be progressively increased. Industry will need to be involved in the selection of an unleaded 100LL replacement, as there will be further regulatory hurdles to overcome (purchase of certification for aircraft/engine for the entire fleet).

In Europe and the UK, some unleaded avgas grades are cheaper than their leaded equivalents. This reduction (coupled with the suggested incentives listed above) will assist GA in reducing unnecessary costs.

## Recommended Actions by Government/Government Agencies

1. DITRDCA and/or CASA develop a Leaded Avgas exit strategy
2. Mirror EASA/UK CAA approval for use of unleaded avgas
3. Incentivise early adopters of unleaded Avgas by:
  - a. Removing fuel excise on unleaded Avgas for 10 years
  - b. Providing interest-free loans to build unleaded Avgas infrastructure at airports
4. As part of lessee agreements with Leased Federal Airports, require sale of unleaded avgas at Capital City Class D Aerodromes with extensive flight training (Moorabbin, Parafield, Jandakot, Bankstown and Archerfield)
5. With industry, choose a 100LL replacement and plan for fleet-wide replacement
6. Disincentivise late hold-outs by:
  - a. Increasing fuel excise on leaded fuels only in 8 years' time, ramping up for 10 years

## Detail

Leaded Avgas is the only type of fuel available in Australia for spark-ignition engine powered aircraft, either 100LL or 100/130. These fuels are required for some of the fleet, but not the majority of flight training aircraft, mostly operating out of the Capital City Class D Aerodromes. The amount of aircraft traffic at these airports would support an additional fuel grade, 91UL. This unleaded Avgas is 100LL without the TEL added in the first place. There is no need for the octane boost in most light aircraft (around 70% in Australia), and these aircraft have been run safely in Europe on 91UL (and even lower grades of unleaded Avgas) for decades.

TEL has many, many negative health and environmental issues, and is even acknowledged by aircraft engine manufacturers as reducing engine life. All sides agree that TEL should not be used unless strictly necessary.

In the USA, the largest user of TEL, plans are underway to eliminate leaded fuels entirely by 2030. Once the largest user of TEL no longer requires it, the world's only manufacturer will likely stop producing it.

On average 65 million Litres of Avgas has been sold in Australia over the last 13 years.<sup>5</sup> This translates to up to 36 tonnes of Lead dispersed in the environment per year, mostly around aerodromes, and especially around the federally-owned Capital City Class D aerodromes.

There is an opportunity for the Commonwealth to require unleaded Avgas (eg, 91UL) be for sale now, at the largest of the federally owned Capital City Class D aerodromes. Most of the flight training in Australia occurs at these locations, and the flying training fleet is mostly permitted to run on unleaded Avgas.

In the USA, a replacement for 100LL has been approved, G100UL. This unleaded fuel is a drop-in replacement, however the manufacturer expects this fuel to be around 15-20% more expensive, adding yet another cost to the GA industry. In addition, because approval to use this fuel was obtained by the fuel manufacturer, every aircraft that wants to use this fuel has to pay for a copy of the approval documentation, at around US\$400-600 per engine. There will also be licensing costs for any oil refineries to make G100UL. The next closest competitor will operate a similar scheme. For a fleet-wide replacement, government intervention (and funding) will be required to obtain Australia-wide permission to use G100UL (or any other replacement).

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<sup>5</sup> *Australian Petroleum Statistics* | [energy.gov.au](https://www.energy.gov.au), n.d., viewed 10 March 2023, <<https://www.energy.gov.au/government-priorities/energy-data/australian-petroleum-statistics>>.